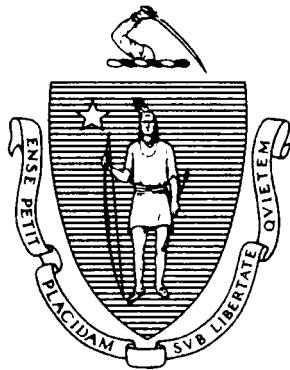


Commonwealth of Massachusetts

Division of Public Employee
Retirement Administration



INVESTMENT REPORT
MASSACHUSETTS CONTRIBUTORY RETIREMENT
SYSTEMS FOR PUBLIC EMPLOYEES

DECEMBER 31, 1992

WILLIAM F. WELD
Governor

MARK E. ROBINSON
Secretary of Administration
and Finance

JOHN J. McGLYNN
Commissioner
Public Employee Retirement Administration

April 30, 1993

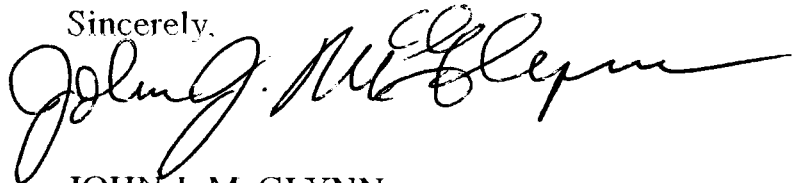
PERA has once again completed its annual analytic report of the investment activities of the Massachusetts Retirement Boards. 1992 was a year of uncertainty in the financial markets. Retirement systems received the benefit of professional management and in general achieved competitive returns. 1992 was also the year in which this Division acted to mandate full disclosure by investment service providers to insure knowledgeable and objective decision-making by boards.

In 1992, the average return was 6.45%. In the 1985-1992 period that return has been 11.40%. Over the same period assets have grown from \$4.6 billion as of December 31, 1984 to \$15.68 billion as of December 31, 1992. One of the untold stories of the last decade has been the lasting contribution that the investment performance of Retirement Boards has made to the stabilization of the fiscal condition of our retirement systems. This development is welcome news to employees, retirees and taxpayers. As we move forward, boards will build on this progress if they resist attempts to divert assets for current needs until such time as those assets are sufficient to fully fund the pension system.

Retirement Boards have now become fully acclimated to delegation of direct investment responsibility to professionals and have focused on adopting long range strategies. As a result, competitive returns have been achieved without the assumption of excessive risk. In exercising their powers, board members must be ever mindful of their fiduciary duty and personal obligation to members of the retirement system. This Trustee-Beneficiary relationship requires the board member to maintain undivided loyalty. Unfortunately, as assets have grown, some of those not directly involved have suggested the use of these assets in ways which will not benefit the pension interests of employees and retirees. Further success in the investment of assets will largely depend on board members' ability to resist these often well-intentioned suggestions.

Massachusetts public pension funds have played a vital role in the revitalization of the financial condition of our state. Only a decade ago it was widely predicted that the fiscal condition of our retirement systems would threaten the stability of state finances. Instead, thanks to the efforts of board members, public policy makers and administrators, our pension plans have made great strides in amassing funds to pay future benefits.

Sincerely,

A handwritten signature in black ink, appearing to read "John J. McGlynn", with a long, sweeping horizontal line extending to the right.

JOHN J. McGLYNN
Commissioner

TABLE OF CONTENTS

PART I: ANNUAL REPORT OF THE MASSACHUSETTS CONTRIBUTORY RETIREMENT SYSTEMS FOR THE YEAR ENDING DECEMBER 31, 1992.....	1 - 4
Table 1: Annual Return and Asset Allocation.....	5 - 8
Table 2: Historical Annual Returns.....	9 - 12
Table 3: Past Returns (Annualized).....	13 - 16
PART II: RETURNS BY ASSET CLASS.....	17
Table 4: Asset Class Performance.....	18 - 21
PART III: ASSET GROWTH AND EMPLOYEE AND EMPLOYER CONTRIBUTIONS.....	22
Table 5: Asset Growth.....	23 - 26
PART IV: FEES AND TURNOVER.....	27 - 28
Table 6: Gross and Net Performance/Management, Custodian Bank and Consultant Fees.....	29 - 32
Table 7: Portfolio Turnover.....	33 - 36
PART V: INVESTMENT COUNSELORS, CONSULTANTS AND CUSTODIAN BANKS.....	37 - 61

PART I:

***ANNUAL REPORT OF THE MASSACHUSETTS CONTRIBUTORY
RETIREMENT SYSTEMS FOR THE YEAR ENDING DECEMBER 31, 1992***

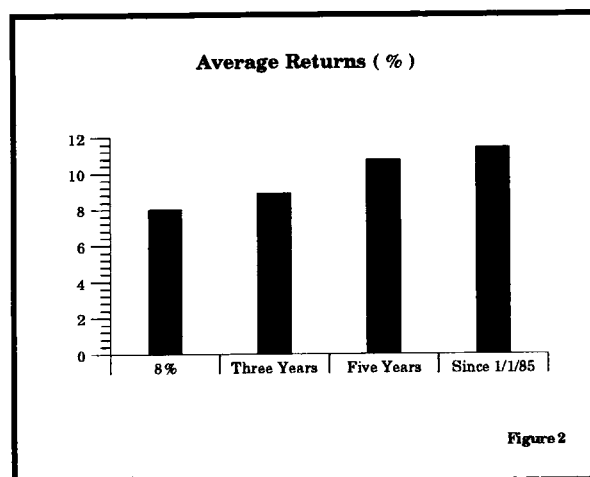
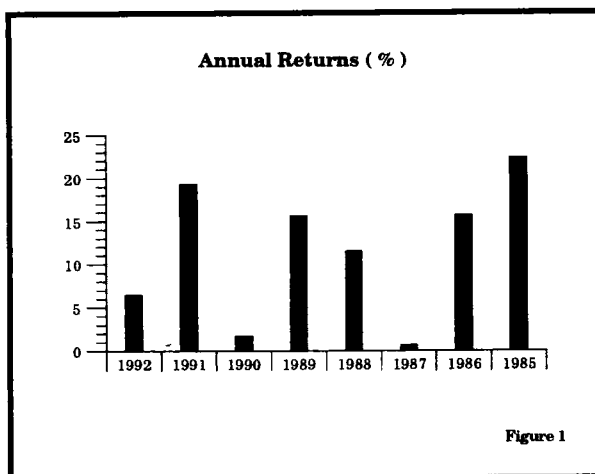
Massachusetts public pension monies are invested by 104 Retirement Boards, the Pension Reserves Investment Management Board (P.R.I.M.) and the Investment Committee of the State Treasurer's Office. Each retirement board is responsible for the assets of its system while the P.R.I.M. Board invests the pension reserve funds of the Commonwealth as well as the assets of local systems which have purchased shares of the Pension Reserves Investment Trust Fund (P.R.I.T.). The Investment Committee of the State Treasurer's Office invests the annuity accounts of the State Employees' Retirement System and the Teachers' Retirement System. This report will provide a rate of return for the State Employees' Retirement System and the Teachers' Retirement System which includes the performance of the Treasurer's Investment Committee and the Pension Reserves Investment Management Board. Although P.R.I.M. is separately listed, the Treasurer's Office is not. The return on the assets which are exclusively the responsibility of the Investment Committee of the State Treasurer's Office in 1992 was 6.17%.

Although significant improvement has taken place in the last several years, Massachusetts' public pension plans, in general, remain underfunded. Investment activities are critical to increasing system assets to defray the cost of future benefits. This becomes even more important as systems shift from the "pay as you go" financing method to actuarial based financing. Following that transition, investment gains and losses will have a direct bearing on the annual appropriations to the pension system by the State and its cities and towns.

This report details investment performance for one year, three years, five years and the 1985-1992 period. The most significant measure of a system's performance is how it has fared over longer periods. Eight years of analysis provides us with an accurate picture of the merits of various investment approaches. As a result, Board members, employees, retirees and taxpayers can assess the performance of those entrusted with the management of these funds.

1992 was a year of uncertainty in the financial markets and the returns of individual systems reflected that uncertainty. Until the fourth quarter, the capital markets, particularly the stock market, remained flat. As economic activity picked up in the fourth quarter, returns improved. The final result was generally very satisfactory performance in light of market conditions.

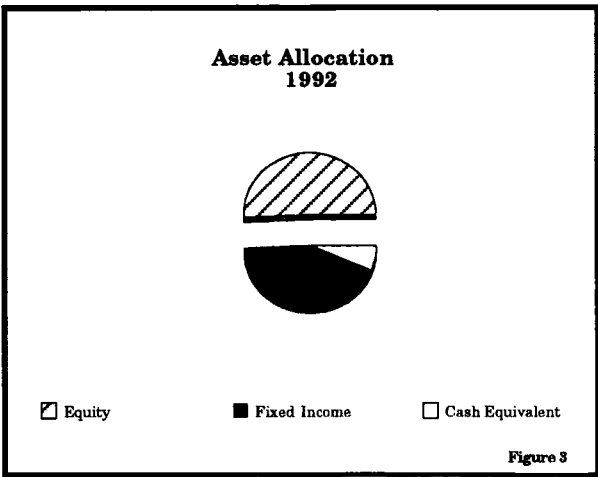
The expected rate of return used in most recent actuarial reports of the Massachusetts systems is 8%. In 1992, the average rate of return was 6.45%; from 1990-1992, the average rate of return was 8.88%; from 1988-1992, the average rate of return was 10.72% and from 1985-1992, the average rate of return was 11.40%. (See Figures 1 and 2.)



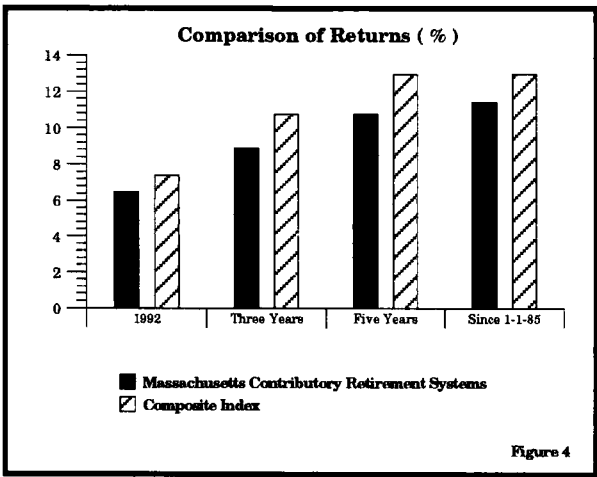
Massachusetts statute establishes the fiduciary obligation of each Retirement Board member. That standard is similar to the ERISA requirements applicable to private pension plans. The Board must discharge its duties for the exclusive purpose of providing benefits to system members and their beneficiaries, with the care, skill, prudence and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of like character and with like aims and by diversifying the investments of the system so as to minimize the risk of large losses unless under the circumstances it is clearly prudent not to do so.

Thus, in addition to other statutory limits, the investment of pension funds by Board members must take place in accordance with fiduciary duty. Failure to comply with that duty could subject individual Board members to personal liability.

The allocation to stocks, bonds and cash equivalents for the calendar year ending December 31, 1992 was 50.65%, 42.97%, and 6.38%, respectively. (See Figure 3.)



A comparison of the returns of the Massachusetts Contributory Retirement Systems with standard indices adjusted to reflect the systems' asset allocation provides a measure of relative performance. (See Figure 4.)



The tables that follow contain this information:

- Table One: Returns for 1992 and Asset Allocation as of December 31, 1992;
- Table Two: Returns for 1985, 1986, 1987, 1988, 1989, 1990 and 1991;
- Table Three: Returns for the past five years, past three years and since January 1, 1985 which is the first year PERA began evaluating returns.

Please note:

- The State Employees' and Teachers' Retirement Systems invest in a trust administered by the Investment Committee of the State Treasurer (MASTERS Trust). The Office of the Treasurer has reported a return of 6.17%. This return differs from that reported in this booklet because the returns reported in this booklet include those assets of the State Employees' and Teachers' Retirement Systems invested with the PRIT Fund. The asset allocation for the State Employees' and Teachers' Retirement Systems as reported by the Office of the Treasurer is 46.54% in stocks, 50.65% in bonds and 2.81% in cash equivalent investments based on the asset allocation of the MASTERS Trust.
- The asset allocation of the PRIT Fund is 67.25% in stocks, 28.45% in bonds and 4.30% in cash equivalent investments.
- Mutual funds, real estate, venture capital, leveraged buyouts, limited partnerships, group trust investments and insurance contracts are generally accounted for on a share basis.
- PERA employs the generally recognized methodology of the Bank Administration Institute in computing returns.
- Prior to the finalization of performance figures, Retirement Boards are provided with an opportunity to review the records on which the returns are based.

PERA would like to thank the Retirement Board members and staff, investment managers, consultants and custodians for their cooperation without which this study could not have been conducted.

**Annual Report of the
Massachusetts Contributory Retirement Systems
for the year ending December 31, 1992**

Table One

Annual Return and Asset Allocation

Page One

Retirement System	1992		..... Allocations.....					
	Return	Rank	Equity		Fixed Income		Cash Equivalents	
			Percent	Rank	Percent	Rank	Percent	Rank
BELMONT	10.44	1	60.74	24	39.08	77	0.18	106
GREENFIELD	10.33	2	35.70	82	59.73	19	4.57	55
BROOKLINE	10.01	3	44.02	53	53.88	35	2.10	88
BLUE HILLS REG VO	9.84	4	37.36	73	60.89	13	1.75	96
CAMBRIDGE	9.74	5	49.01	44	36.73	79	14.26	14
BERKSHIRE COUNTY	9.49	6	8.79	107	86.29	1	4.92	54
WINCHESTER	9.29	7	35.50	83	50.86	44	13.64	16
HAVERHILL	9.19	8	52.49	35	43.14	65	4.37	60
GLOUCESTER	9.17	9	48.15	47	45.87	59	5.98	49
QUINCY	9.14	10	49.49	42	44.06	63	6.45	46
SOUTHBRIDGE	9.07	11	47.04	48	49.86	49	3.10	81
ADAMS	9.04	12	27.45	94	57.27	27	15.28	13
NATICK	9.03	13	53.73	31	44.39	61	1.88	92
WELLESLEY	8.96	14	60.24	25	33.57	83	6.19	47
PLYMOUTH COUNTY	8.92	15	21.84	100	57.30	26	20.86	8
WESTFIELD	8.87	16	50.77	40	35.22	81	14.01	15
WEST SPRINGFIELD	8.73	17	36.69	76	60.05	16	3.26	80
HAMPDEN COUNTY	8.70	18	46.87	49	48.77	53	4.36	61
PITTSFIELD	8.66	19	36.47	78	56.54	29	6.99	44
WOBURN	8.66	20	27.03	95	71.37	3	1.60	100
CHICOPEE	8.60	21	48.95	45	33.75	82	17.30	10
HOLYOKE	8.60	22	48.36	46	47.65	56	3.99	67
BROCKTON	8.57	23	38.43	70	49.97	48	11.60	24
PEABODY	8.56	24	46.76	50	48.86	52	4.38	59
MARLBOROUGH	8.54	25	36.57	77	61.77	12	1.66	99
FRANKLIN COUNTY	8.51	26	40.54	63	50.70	45	8.76	36
CONCORD	8.47	27	38.27	71	50.06	47	11.67	23

Retirement System	1992		Allocations.....					
	Return	Rank	Equity		Fixed Income		Cash Equivalents	
			Percent	Rank	Percent	Rank	Percent	Rank
MEDFORD	8.47	28	38.95	67	48.76	54	12.29	20
ESSEX COUNTY	8.43	29	43.44	55	40.16	74	16.40	12
ARLINGTON	8.33	30	38.45	69	58.59	21	2.96	83
FRAMINGHAM	8.32	31	94.73	17	0.02	89	5.25	52
TAUNTON	8.26	32	40.17	64	56.40	30	3.43	77
NEWTON	8.23	33	55.49	30	37.74	78	6.77	45
LEXINGTON	8.20	34	56.51	28	40.90	72	2.59	86
WALTHAM	8.17	35	43.38	56	52.99	38	3.63	72
GREATER LAWRENCE	8.02	36	36.00	80	60.62	14	3.38	79
CLINTON	8.01	37	96.13	14	1.98	87	1.89	91
WORCESTER	7.98	38	49.92	41	39.53	75	10.55	28
LOWELL	7.94	39	45.96	51	44.18	62	9.86	30
HULL	7.93	40	12.90	104	70.69	4	16.41	11
MASS PORT AUTH	7.91	41	42.43	58	49.47	50	8.10	39
STONEHAM	7.89	42	35.47	84	60.27	15	4.26	66
WINTHROP	7.87	43	33.67	90	62.72	10	3.61	73
WORCESTER COUNTY	7.87	44	37.28	74	53.38	36	9.34	34
MASS TURNPIKE AUT	7.81	45	11.61	105	64.21	7	24.18	5
EASTHAMPTON	7.80	46	18.12	101	80.02	2	1.86	93
MELROSE	7.76	47	38.75	68	49.42	51	11.83	22
HAMPSHIRE COUNTY	7.75	48	53.18	34	39.15	76	7.67	40
MAYNARD	7.68	49	24.23	97	65.16	6	10.61	27
PLYMOUTH	7.49	50	60.85	23	35.76	80	3.39	78
BARNSTABLE COUNTY	7.45	51	50.89	39	41.75	68	7.36	42
METHUEN	7.44	52	42.08	59	48.12	55	9.80	31
BRAINTREE	7.42	53	17.39	103	59.47	20	23.14	7
REVERE	7.42	54	23.83	98	56.14	31	20.03	9

Retirement System	1992		Allocations.....					
	Return	Rank	Equity		Fixed Income		Cash Equivalents	
			Percent	Rank	Percent	Rank	Percent	Rank
MIDDLESEX COUNTY	7.25	55	49.22	43	40.98	70	9.80	32
SPRINGFIELD	7.25	56	39.74	66	56.63	28	3.63	71
EVERETT	7.07	57	44.25	52	53.01	37	2.74	84
MASS WATER RESOUR	7.00	58	17.75	102	51.29	41	30.96	3
SALEM	6.92	59	34.50	87	54.61	34	10.89	26
DUKES COUNTY	6.91	60	10.68	106	51.06	42	38.26	1
NORWOOD	6.84	61	34.44	88	62.00	11	3.56	74
LEOMINSTER	6.67	62	37.58	72	58.08	23	4.34	62
DANVERS	6.57	63	42.05	60	55.30	32	2.65	85
ATHOL	6.50	64	22.46	99	64.19	8	13.35	18
ATTLEBORO	6.48	65	32.32	91	58.42	22	9.26	35
CHELSEA	6.45	66	34.14	89	60.00	17	5.86	50
AMESBURY	6.36	67	36.05	79	51.80	40	12.15	21
FALMOUTH	6.32	68	57.87	27	40.90	71	1.23	102
WATERTOWN	6.23	69	43.66	54	46.97	57	9.37	33
BRISTOL COUNTY	6.22	70	26.23	96	63.86	9	9.91	29
STATE TEACHERS	6.14	71	96.15	13	0.00	104	3.85	69
MILFORD	6.12	72	35.07	85	57.76	25	7.17	43
NEW BEDFORD	6.03	73	29.13	93	41.92	67	28.95	4
NEWBURYPORT	5.98	74	42.62	57	52.82	39	4.56	56
FALL RIVER	5.91	75	30.56	92	65.16	5	4.28	64
SOMERVILLE	5.91	76	34.94	86	27.14	86	37.92	2
NORTH ATTLEBORO	5.86	77	41.05	61	50.42	46	8.53	37
BEVERLY	5.66	78	51.12	38	40.42	73	8.46	38
STATE	5.53	79	98.95	3	0.00	105	1.05	103
FITCHBURG	5.43	80	35.78	81	50.90	43	13.32	19
BOSTON	5.41	81	58.03	26	28.45	84	13.52	17

<u>Retirement System</u>	<u>1992</u>		<u>Allocations.....</u>					
	<u>Return</u>	<u>Rank</u>	<u>Equity</u>		<u>Fixed Income</u>		<u>Cash Equivalents</u>	
			<u>Percent</u>	<u>Rank</u>	<u>Percent</u>	<u>Rank</u>	<u>Percent</u>	<u>Rank</u>
SAUGUS	5.00	82	98.32	5	0.00	102	1.68	97
NORTHBRIDGE	4.92	83	99.24	1	0.00	100	0.76	105
MINUTEMAN REG VO	4.89	84	96.53	11	0.00	96	3.47	75
FAIRHAVEN	4.88	85	92.58	19	0.00	91	7.42	41
MILTON	4.88	86	99.20	2	0.00	95	0.80	104
READING	4.87	87	95.45	15	0.00	101	4.55	57
MONTAGUE	4.86	88	96.23	12	0.00	97	3.77	70
DEDHAM	4.84	89	98.69	4	0.00	90	1.31	101
GARDNER	4.82	90	88.79	20	0.00	92	11.21	25
NORFOLK COUNTY	4.82	91	97.42	8	0.00	99	2.58	87
WAKEFIELD	4.82	92	98.15	6	0.00	106	1.85	94
MASS HOUSING FINA	4.80	93	95.03	16	0.00	94	4.97	53
SHREWSBURY	4.80	94	97.96	7	0.00	103	2.04	89
HINGHAM	4.78	95	97.03	9	0.00	93	2.97	82
NEEDHAM	4.78	96	96.56	10	0.00	98	3.44	76
PRIM BOARD	4.77	97	67.25	22	28.45	85	4.30	63
WEYMOUTH	4.69	98	93.94	18	0.00	107	6.06	48
NORTH ADAMS	3.96	99	52.26	36	43.46	64	4.28	65
WEBSTER	3.94	100	75.87	21	0.46	88	23.67	6
NORTHAMPTON	3.70	101	53.50	33	42.64	66	3.86	68
MALDEN	2.87	102	51.69	37	46.32	58	1.99	90
SWAMPSCOTT	2.09	103	40.12	65	59.74	18	0.14	107
MARBLEHEAD	2.04	104	53.68	32	44.66	60	1.66	98
LAWRENCE	2.03	105	36.91	75	57.76	24	5.33	51
LYNN	1.39	106	56.47	29	41.74	69	1.79	95
ANDOVER	1.08	107	40.70	62	54.80	33	4.50	58

***Annual Report of the
Massachusetts Contributory Retirement Systems
for the year ending December 31, 1992***

Table Two

Historical Annual Returns

Page One

<u>Retirement System</u>	<u>1991 Return</u>	<u>1990 Return</u>	<u>1989 Return</u>	<u>1988 Return</u>	<u>1987 Return</u>	<u>1986 Return</u>	<u>1985 Return</u>
ADAMS	17.97	5.37	11.52	6.58	5.35	9.14	26.30
AMESBURY	19.50	5.21	14.00	10.95	0.23	10.19	18.62
ANDOVER	43.23	-0.12	13.26	10.18	0.95	15.15	26.79
ARLINGTON	17.80	3.11	15.81	10.23	3.11	16.64	20.13
ATHOL	15.63	7.91	14.09	9.00	3.72	9.82	19.90
ATTLEBORO	19.32	5.27	19.11	6.92	2.48	12.91	19.87
BARNSTABLE COUNTY	17.72	-1.32	9.15	9.14	-5.48	12.69	21.15
BELMONT	20.76	0.41	17.03	10.95	-2.90	9.59	23.88
BERKSHIRE COUNTY	18.31	5.08	10.49	9.17	1.83	13.25	21.92
BEVERLY	22.64	1.65	10.28	10.64	-0.71	12.97	20.71
BLUE HILLS REG VO	19.67	3.83	15.39	9.51	3.09	13.35	11.67
BOSTON	21.53	-2.82	20.36	12.73	-3.78	16.12	25.65
BRAINTREE	16.64	2.68	13.84	10.59	5.18	16.41	22.88
BRISTOL COUNTY	19.18	6.01	15.18	7.70	-1.20	11.43	21.05
BROCKTON	20.22	-0.91	11.62	8.12	1.63	12.47	22.38
BROOKLINE	23.33	1.54	19.78	9.81	0.95	11.78	16.24
CAMBRIDGE	16.01	0.02	10.95	7.91	-2.86	16.69	31.96
CHELSEA	21.55	5.70	14.75	9.43	-1.82	13.48	24.06
CHICOPEE	18.74	4.39	13.10	12.42	-0.18	10.53	20.23
CLINTON	17.73	-0.18	7.65	7.81	-5.31	12.45	28.89
CONCORD	20.41	4.48	17.24	10.48	3.68	10.67	16.77
DANVERS	20.13	5.79	14.05	10.57	1.70	9.84	19.13
DEDHAM	15.46	-1.64	16.43	9.98	3.61	12.67	27.93
DUKES COUNTY	10.89	-1.61	8.31	12.01	-4.55	10.68	22.68
EASTHAMPTON	17.85	8.20	16.51	12.83	1.99	14.07	20.94
ESSEX COUNTY	16.93	4.56	13.07	11.87	-1.19	17.16	25.17
EVERETT	23.43	5.57	20.01	6.85	0.98	13.56	22.43

<u>Retirement System</u>	<u>1991 Return</u>	<u>1990 Return</u>	<u>1989 Return</u>	<u>1988 Return</u>	<u>1987 Return</u>	<u>1986 Return</u>	<u>1985 Return</u>
FAIRHAVEN	15.31	-1.44	16.59	13.29	4.19	9.68	21.53
FALL RIVER	22.01	6.14	18.03	6.41	1.94	15.35	25.14
FALMOUTH	23.87	7.09	21.10	9.76	2.30	12.41	18.37
FITCHBURG	21.00	5.24	17.14	10.40	1.32	12.41	15.35
FRAMINGHAM	20.85	4.94	13.53	9.55	2.63	13.56	19.37
FRANKLIN COUNTY	17.18	5.61	11.95	9.51	-0.24	7.73	18.34
GARDNER	15.13	-1.22	16.97	13.41	3.16	12.94	19.45
GLOUCESTER	18.15	3.89	13.23	13.68	-0.45	16.57	25.69
GREATER LAWRENCE	18.70	3.80	11.36	8.13	1.71	7.28	7.69
GREENFIELD	18.23	5.92	15.28	8.34	0.30	13.19	17.23
HAMPDEN COUNTY	18.05	2.24	15.12	11.37	2.03	13.89	20.78
HAMPSHIRE COUNTY	15.24	4.88	14.16	8.25	4.40	11.73	17.17
HAVERHILL	20.32	1.30	13.43	13.40	2.87	16.80	22.71
HINGHAM	14.23	-1.32	14.69	10.89	0.95	15.32	22.28
HOLYOKE	18.50	3.50	13.13	12.85	4.23	14.15	27.88
HULL	15.01	3.23	9.39	9.79	0.57	11.36	17.28
LAWRENCE	27.20	3.22	19.04	5.44	-2.18	12.24	23.67
LEOMINSTER	17.39	5.19	13.93	10.03	2.47	12.21	19.64
LEXINGTON	24.85	2.05	13.48	9.57	-0.91	15.67	25.47
LOWELL	16.60	1.39	11.92	7.32	3.74	14.50	20.21
LYNN	33.49	0.12	17.50	11.62	-1.95	12.20	23.66
MALDEN	36.08	0.21	20.33	11.98	-2.94	9.38	22.27
MARBLEHEAD	35.37	0.81	18.96	10.61	-3.24	7.88	21.90
MARLBOROUGH	18.05	4.21	14.08	14.11	-0.71	9.91	21.89
MASS HOUSING FINA	15.28	-1.67	16.84	13.80	-0.90	9.39	9.58
MASS PORT AUTH	20.51	4.32	19.14	11.34	3.93	18.68	22.18
MASS TURNPIKE AUT	15.38	6.88	14.03	10.78	3.15	16.90	22.68

<u>Retirement System</u>	<u>1991 Return</u>	<u>1990 Return</u>	<u>1989 Return</u>	<u>1988 Return</u>	<u>1987 Return</u>	<u>1986 Return</u>	<u>1985 Return</u>
MASS WATER RESOUR	17.42	-1.02	14.60	10.66	6.32	5.78	N/A
MAYNARD	14.80	-3.33	5.94	7.72	1.10	9.91	27.80
MEDFORD	15.31	5.07	14.70	10.00	1.41	15.12	20.35
MELROSE	17.22	3.12	16.27	10.35	2.11	16.48	21.15
METHUEN	15.52	2.43	13.21	8.16	1.87	13.51	20.03
MIDDLESEX COUNTY	22.06	1.83	16.33	11.16	2.06	14.89	22.92
MILFORD	23.20	5.77	16.95	8.05	-4.86	8.98	19.66
MILTON	15.42	-1.59	16.88	13.49	4.46	10.93	22.53
MINUTEMAN REG VO	14.70	-1.55	16.90	13.87	4.49	22.05	13.17
MONTAGUE	15.68	-1.34	16.39	13.56	4.86	9.15	13.28
NATICK	21.50	3.47	17.21	10.91	-0.09	14.56	25.80
NEEDHAM	15.32	-1.55	16.84	13.83	4.67	20.76	19.58
NEW BEDFORD	20.95	-3.36	10.07	8.04	-6.31	13.68	21.48
NEWBURYPORT	21.03	5.07	13.61	10.32	-1.62	9.18	20.08
NEWTON	22.80	-4.57	16.02	13.60	-3.83	14.33	22.46
NORFOLK COUNTY	15.08	-1.16	16.62	13.42	4.14	17.47	23.77
NORTH ADAMS	31.57	2.31	19.79	9.31	-2.33	9.84	23.80
NORTH ATTLEBORO	18.19	3.07	15.93	9.60	0.57	12.66	17.64
NORTHAMPTON	32.38	2.24	18.12	11.28	-6.82	12.44	22.07
NORTHBRIDGE	15.30	-1.51	16.99	13.50	3.78	10.34	19.33
NORWOOD	14.96	6.60	17.01	11.22	2.83	13.30	17.17
PEABODY	17.96	3.01	13.43	12.77	-0.41	15.77	23.23
PITTSFIELD	17.85	4.79	15.12	9.54	-1.81	13.05	24.07
PLYMOUTH	24.77	6.89	16.18	8.33	-2.04	15.73	28.32
PLYMOUTH COUNTY	18.49	4.08	12.83	10.46	-1.30	16.71	24.66
PRIM BOARD	14.69	-2.27	17.90	13.43	3.25	19.94	22.76
QUINCY	19.07	4.09	13.43	6.36	-4.66	13.30	18.62

<u>Retirement System</u>	<u>1991 Return</u>	<u>1990 Return</u>	<u>1989 Return</u>	<u>1988 Return</u>	<u>1987 Return</u>	<u>1986 Return</u>	<u>1985 Return</u>
READING	15.43	-1.67	16.91	11.71	-2.77	10.73	26.85
REVERE	15.65	3.71	8.79	9.26	2.40	9.66	14.44
SALEM	18.73	3.31	12.86	7.39	2.99	14.57	19.46
SAUGUS	14.94	-1.32	16.55	13.50	3.98	11.50	14.53
SHREWSBURY	15.19	-1.68	16.87	13.81	4.42	19.33	17.28
SOMERVILLE	20.13	0.94	13.07	10.79	-7.08	13.14	29.94
SOUTHBRIDGE	17.76	3.55	6.77	7.82	-2.85	16.06	23.91
SPRINGFIELD	22.90	5.76	19.93	8.54	-1.18	14.91	20.45
STATE	18.10	0.44	15.70	12.67	1.89	16.17	24.10
STATE TEACHERS	18.53	1.95	15.64	12.54	0.96	16.03	24.01
STONEHAM	17.15	3.41	16.13	8.63	2.37	16.38	23.69
SWAMPSCOTT	30.22	2.37	18.93	14.25	-3.90	10.87	27.94
TAUNTON	18.85	5.49	16.83	10.64	6.06	20.07	23.41
WAKEFIELD	15.11	-1.48	16.04	13.34	4.43	21.13	19.76
WALTHAM	21.82	4.46	20.97	7.18	1.40	16.65	22.20
WATERTOWN	18.10	0.21	13.10	12.25	1.29	12.23	19.89
WEBSTER	17.65	-0.92	5.43	7.10	3.36	13.46	19.71
WELLESLEY	25.78	2.66	17.64	12.46	3.23	17.91	22.73
WEST SPRINGFIELD	18.34	4.30	16.51	10.63	1.07	11.20	15.79
WESTFIELD	18.66	5.11	16.86	8.11	0.77	15.59	20.29
WEYMOUTH	15.48	-1.49	16.69	13.33	4.53	20.02	28.19
WINCHESTER	18.58	5.51	15.75	9.62	0.01	15.27	22.77
WINTHROP	19.91	3.41	16.58	10.05	-0.24	14.67	18.51
WOBURN	15.86	5.62	13.06	8.56	-0.50	21.69	32.44
WORCESTER	15.11	1.56	14.39	12.22	1.78	15.81	19.25
WORCESTER COUNTY	16.21	3.72	10.30	8.59	1.40	16.05	27.06

**Annual Report of the
Massachusetts Contributory Retirement Systems
for the year ending December 31, 1992**

Table Three

Past Returns (Annualized)

Page One

Retirement System	Five Years		Three Years		Since January 1985	
	Return	Rank	Return	Rank	Return	Rank
MALDEN	13.58	1	11.94	6	11.87	23
FALMOUTH	13.39	2	12.15	3	12.42	10
WELLESLEY	13.23	3	12.05	4	13.64	1
SWAMPSCOTT	13.09	4	10.82	25	12.25	15
NORTHAMPTON	13.03	5	11.96	5	11.33	47
NORTH ADAMS	12.88	6	11.85	7	11.76	25
MARBLEHEAD	12.87	7	11.67	10	11.16	49
SPRINGFIELD	12.66	8	11.71	9	12.03	20
BROOKLINE	12.62	9	11.27	14	11.43	39
EASTHAMPTON	12.56	10	11.19	16	12.37	11
ANDOVER	12.53	11	13.08	1	13.01	4
PLYMOUTH	12.53	12	12.75	2	12.82	5
MASS PORT AUTH	12.47	13	10.70	28	13.28	3
EVERETT	12.34	14	11.74	8	12.20	17
WALTHAM	12.28	15	11.24	15	12.58	8
NATICK	12.24	16	11.08	19	12.50	9
LYNN	12.19	17	10.66	30	11.67	30
CONCORD	12.07	18	10.92	23	11.38	43
TAUNTON	11.90	19	10.72	27	13.52	2
MILFORD	11.81	20	11.41	11	10.15	87
BELMONT	11.70	21	10.22	43	10.93	59
MARLBOROUGH	11.69	22	10.12	47	11.05	55
FITCHBURG	11.67	23	10.32	36	10.86	61
WINCHESTER	11.65	24	10.99	21	11.88	22
WEST SPRINGFIELD	11.58	25	10.30	40	10.67	72
GREENFIELD	11.53	26	11.38	12	10.95	58
BLUE HILLS REG VO	11.52	27	10.92	22	10.67	70

<u>Retirement System</u>	<u>Five Years</u>		<u>Three Years</u>		<u>Since January 1985</u>	
	<u>Return</u>	<u>Rank</u>	<u>Return</u>	<u>Rank</u>	<u>Return</u>	<u>Rank</u>
GLOUCESTER	11.52	28	10.25	41	12.22	16
MIDDLESEX COUNTY	11.51	29	10.06	48	12.05	19
FALL RIVER	11.49	30	11.11	18	12.33	12
CHELSEA	11.42	31	11.00	20	11.41	41
WINTHROP	11.41	32	10.18	45	11.13	54
WESTFIELD	11.40	33	10.73	26	11.58	33
LEXINGTON	11.38	34	11.29	13	11.94	21
CHICOPEE	11.35	35	10.42	34	10.79	68
HAVERHILL	11.35	36	9.99	51	12.27	14
FRAMINGHAM	11.31	37	11.16	17	11.43	40
DANVERS	11.30	38	10.64	31	10.81	66
NORWOOD	11.25	39	9.40	64	11.13	53
ATTLEBORO	11.24	40	10.18	44	11.35	45
HOLYOKE	11.20	41	10.03	49	12.62	7
PITTSFIELD	11.10	42	10.30	39	11.16	50
AMESBURY	11.08	43	10.17	46	10.46	76
BOSTON	11.05	44	7.58	85	11.40	42
NEWBURYPORT	11.05	45	10.46	33	10.22	84
PEABODY	11.03	46	9.67	57	11.55	34
HAMPDEN COUNTY	10.96	47	9.47	62	11.33	46
LAWRENCE	10.95	48	10.24	42	10.87	60
ARLINGTON	10.93	49	9.58	60	11.72	28
MASS TURNPIKE AUT	10.92	50	9.96	53	12.05	18
ESSEX COUNTY	10.89	51	9.85	56	11.74	26
PLYMOUTH COUNTY	10.85	52	10.34	35	11.59	32
MELROSE	10.82	53	9.21	66	11.61	31
NEWTON	10.82	54	8.25	80	10.67	71

Retirement System	Five Years		Three Years		Since January 1985	
	Return	Rank	Return	Rank	Return	Rank
STATE TEACHERS	10.79	55	8.65	74	11.71	29
BRISTOL COUNTY	10.73	56	10.30	38	10.47	75
MEDFORD	10.64	57	9.54	61	11.15	51
ATHOL	10.57	58	9.94	55	10.71	69
LEOMINSTER	10.55	59	9.62	59	10.80	67
STONEHAM	10.52	60	9.33	65	11.74	27
FRANKLIN COUNTY	10.48	61	10.32	37	9.68	93
BERKSHIRE COUNTY	10.42	62	10.82	24	11.02	56
NORTH ATTLEBORO	10.38	63	8.85	70	10.26	82
QUINCY	10.29	64	10.60	32	9.66	94
STATE	10.29	65	7.77	83	11.55	35
WOBBURN	10.29	66	9.96	54	12.78	6
BRAINTREE	10.13	67	8.76	72	11.78	24
WORCESTER	10.13	68	8.08	81	10.84	63
ADAMS	10.01	69	10.67	29	11.21	48
HAMPSHIRE COUNTY	9.99	70	9.20	67	10.36	78
SOMERVILLE	9.98	71	8.70	73	10.34	79
BEVERLY	9.96	72	9.62	58	10.21	85
GREATER LAWRENCE	9.89	73	10.00	50	8.23	104
WATERTOWN	9.80	74	7.93	82	10.20	86
SALEM	9.71	75	9.46	63	10.61	74
MONTAGUE	9.61	76	6.17	89	9.40	96
NEEDHAM	9.61	77	5.96	100	11.51	36
NORTHBRIDGE	9.61	78	6.02	94	10.12	88
GARDNER	9.60	79	6.03	93	10.36	77
MILTON	9.58	80	6.01	95	10.63	73
MASS HOUSING FINA	9.57	81	5.91	102	8.18	105

<u>Retirement System</u>	<u>Five Years</u>		<u>Three Years</u>		<u>Since January 1985</u>	
	<u>Return</u>	<u>Rank</u>	<u>Return</u>	<u>Rank</u>	<u>Return</u>	<u>Rank</u>
SHREWSBURY	9.56	82	5.88	103	11.02	57
MASS WATER RESOUR	9.54	83	7.53	86	N/A	N/A
NORFOLK COUNTY	9.54	84	6.04	91	11.49	37
MINUTEMAN REG VO	9.53	85	5.80	104	10.82	65
SAUGUS	9.51	86	6.00	96	9.66	95
WEYMOUTH	9.51	87	6.00	97	12.32	13
FAIRHAVEN	9.50	88	6.03	92	10.27	81
PRIM BOARD	9.45	89	5.50	106	11.49	38
WAKEFIELD	9.35	90	5.93	101	11.38	44
BROCKTON	9.31	91	8.95	69	10.25	83
METHUEN	9.26	92	8.33	78	10.11	89
WORCESTER COUNTY	9.26	93	9.15	68	11.14	52
READING	9.23	94	5.98	99	9.87	92
HULL	9.01	95	8.62	75	9.20	98
LOWELL	8.92	96	8.47	76	10.29	80
REVERE	8.90	97	8.81	71	8.83	99
SOUTHBRIDGE	8.89	98	9.97	52	9.97	91
CAMBRIDGE	8.80	99	8.39	77	10.85	62
DEDHAM	8.80	100	5.99	98	10.83	64
HINGHAM	8.48	101	5.71	105	9.97	90
BARNSTABLE COUNTY	8.26	102	7.67	84	8.49	102
NEW BEDFORD	8.07	103	7.42	87	8.40	103
CLINTON	8.06	104	8.28	79	9.20	97
DUKES COUNTY	7.19	105	5.26	107	7.88	106
WEBSTER	6.47	106	6.61	88	8.50	101
MAYNARD	6.40	107	6.12	90	8.61	100

PART II:

RETURNS BY ASSET CLASS

The most important decision made by pension fund investors today is the distribution of assets among investment vehicles. The percentage of assets invested in stocks, bonds, venture capital, real estate and other categories is largely responsible for the return achieved.

Fiduciaries must carefully establish an investment plan which sets forth the financial needs of the fund and integrates investment activity as a vital part of meeting those financial needs. Levels of risk must be reviewed and return objectives which reflect the risk levels must be established. At that point an asset allocation strategy designed to achieve the return while maintaining an acceptable level of risk must be developed.

The table that follows contains the following information:

- Table Four: Stock, bond and cash equivalent returns for the calendar year ending December 31, 1992 and for the previous five year period.

On average, fixed income investments returned 7.46% for 1992 and 10.07% over the past five years. Stocks returned 6.48% for 1992 and 10.86% over the past five years. Cash equivalent investments returned 4.00% for 1992 and 7.29% over the past five years. These results are based on the performance of local Retirement Boards and exclude the performance of the State Employees' and Teachers' Retirement Systems. (See Figures 5 and 6 for a comparison of returns versus standard indices.)

EQUITIES

	S & P 500 Index	Massachusetts Contributory Retirement Systems
1985	31.57%	46.23%
1986	18.57%	16.26%
1987	5.09%	.55%
1988	16.61%	13.05%
1989	31.68%	22.41%
1990	-3.11%	-7.37%
1991	30.48%	22.71%
1992	7.64%	6.48%
Past Five Years	15.88%	10.86%

Figure 5

FIXED INCOME

	Shearson Lehman Govt/Corp Bond Index	Massachusetts Contributory Retirement Systems
1985	21.33%	22.70%
1986	15.59%	16.42%
1987	2.31%	1.01%
1988	7.59%	8.27%
1989	14.23%	12.80%
1990	8.29%	7.49%
1991	16.13%	14.52%
1992	7.58%	7.46%
Past Five Years	10.70%	10.07%

Figure 6

**Annual Report of the
Massachusetts Contributory Retirement Systems
for the year ending December 31, 1992**

Table Four

Asset Class Performance

Page One

Retirement System	Past Year						Past Five Years					
	Equity		Fixed Income		Cash equivalents		Equity		Fixed Income		Cash equivalents	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank
ADAMS	14.28	3	7.81	45	3.65	94	8.96	91	10.56	38	7.30	60
AMESBURY	6.52	57	7.02	74	4.41	48	16.14	14	10.27	62	7.47	39
ANDOVER	-5.95	105	7.80	46	4.92	19	18.89	3	10.87	24	7.53	33
ARLINGTON	10.32	22	7.31	61	5.52	10	13.44	39	10.27	63	8.12	6
ATHOL	5.75	63	7.02	75	3.71	90	15.55	21	10.05	76	7.38	50
ATTLEBORO	7.09	55	6.54	85	3.39	104	15.94	16	9.82	84	6.66	100
BARNSTABLE COUNTY	6.58	56	8.86	14	3.84	82	7.43	96	10.42	51	7.16	79
BELMONT	14.05	4	6.98	77	4.51	38	15.83	18	10.08	73	7.18	75
BERKSHIRE COUNTY	27.05	1	8.03	31	5.04	16	10.50	68	10.43	50	8.29	3
BEVERLY	3.58	98	8.97	11	4.25	60	9.55	85	11.00	20	7.66	19
BLUE HILLS REG VO	11.64	7	8.36	22	4.59	32	12.75	46	11.47	10	6.76	96
BOSTON	4.84	77	7.91	40	4.17	65	12.02	54	11.54	6	6.68	99
BRAINTREE	8.28	43	8.82	15	3.59	95	13.74	35	10.31	58	7.07	83
BRISTOL COUNTY	4.41	90	6.91	79	3.56	98	11.95	56	10.53	41	7.43	43
BROCKTON	7.95	47	9.40	5	4.83	22	7.48	95	11.04	19	7.30	61
BROOKLINE	13.04	5	7.45	56	4.48	41	15.62	19	11.41	11	7.46	40
CAMBRIDGE	12.13	6	7.99	35	4.45	43	7.36	97	10.71	32	6.84	93
CHELSEA	4.84	78	7.31	62	3.20	106	15.44	23	9.97	79	6.71	98
CHICOPEE	10.82	13	6.36	88	4.34	54	12.86	43	10.30	59	7.90	12
CLINTON	8.09	45	8.56	18	3.46	103	7.61	94	12.09	1	7.13	80
CONCORD	9.21	36	7.96	38	4.15	66	15.18	26	10.92	21	7.50	36
DANVERS	5.00	69	7.23	66	4.48	42	16.47	11	10.13	71	7.02	88
DEDHAM	4.81	84	N/A	N/A	3.50	101	8.76	92	9.10	89	6.78	94
DUKES COUNTY	5.00	70	8.90	12	4.35	53	4.86	102	9.94	80	7.83	13
EASTHAMPTON	7.75	48	7.85	44	3.82	84	20.93	1	11.32	15	7.03	87
ESSEX COUNTY	10.40	21	7.89	42	4.00	76	13.13	41	10.47	45	6.86	91
EVERETT	5.54	66	6.92	78	5.59	8	16.38	12	9.92	83	8.47	1

Retirement System	..... Past Year .....						..... Past Five Years					
	Equity		Fixed Income		Cash equivalents		Equity		Fixed Income		Cash equivalents	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank
FAIRHAVEN	4.88	76	N/A	N/A	4.07	73	9.60	80	N/A	N/A	6.13	106
FALL RIVER	4.11	93	6.68	83	4.08	72	16.64	10	9.77	85	7.64	22
FALMOUTH	4.26	92	7.53	52	5.36	13	17.38	7	10.86	26	7.92	9
FITCHBURG	0.61	99	8.23	26	4.21	62	13.72	36	11.11	17	7.73	16
FRAMINGHAM	8.33	42	11.41	1	4.42	47	10.52	67	10.07	74	7.64	23
FRANKLIN COUNTY	10.71	14	7.10	71	3.26	105	11.52	59	10.30	60	6.09	107
GARDNER	4.84	79	N/A	N/A	4.53	37	9.67	76	N/A	N/A	8.18	4
GLOUCESTER	11.09	10	7.46	54	3.59	96	13.57	38	10.35	56	6.76	97
GREATER LAWRENCE	10.60	16	6.84	80	4.18	64	9.37	89	10.38	55	7.30	62
GREENFIELD	15.85	2	7.80	47	4.28	59	15.95	15	10.45	49	7.44	42
HAMPDEN COUNTY	10.23	23	7.29	63	4.02	75	12.41	52	10.48	44	7.41	44
HAMPSHIRE COUNTY	7.68	49	7.73	48	4.13	68	11.94	57	10.51	42	7.65	21
HAVERHILL	10.68	15	7.65	49	4.41	49	12.57	48	10.46	47	7.01	89
HINGHAM	4.82	81	N/A	N/A	4.15	67	10.70	65	9.06	90	7.33	56
HOLYOKE	9.90	29	7.43	57	3.77	87	12.62	47	10.07	75	7.40	46
HULL	8.03	46	7.20	67	5.64	6	2.98	104	9.94	81	7.33	57
LAWRENCE	-10.93	107	7.37	60	4.75	26	9.67	77	10.90	22	7.53	34
LEOMINSTER	4.35	91	8.25	25	4.20	63	11.22	62	10.70	33	7.63	24
LEXINGTON	8.36	41	7.90	41	4.40	50	12.12	53	12.02	3	7.24	67
LOWELL	9.80	32	6.99	76	4.76	24	5.62	101	9.94	82	7.48	38
LYNN	-3.96	104	9.14	7	4.88	21	15.91	17	10.19	66	7.71	17
MALDEN	-3.45	102	9.13	8	5.66	5	18.00	5	10.35	57	7.46	41
MARBLEHEAD	-2.12	101	8.54	20	5.45	12	16.38	13	10.47	46	7.63	25
MARLBOROUGH	10.05	27	7.99	36	4.38	51	12.97	42	10.17	67	7.39	49
MASS HOUSING FINA	4.77	88	N/A	N/A	3.84	83	9.55	86	N/A	N/A	7.24	68
MASS PORT AUTH	9.51	34	7.28	64	4.36	52	15.39	24	10.69	34	7.34	55
MASS TURNPIKE AUT	6.31	60	8.89	13	3.85	80	12.55	49	11.57	5	7.27	65

Retirement System	..... Past Year .....						..... Past Five Years					
	Equity		Fixed Income		Cash equivalents		Equity		Fixed Income		Cash equivalents	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank
MASS WATER RESOUR	9.82	30	7.10	72	3.69	92	12.43	51	9.43	88	7.05	84
MAYNARD	7.43	51	7.18	69	4.44	44	4.68	103	11.48	9	7.97	8
MEDFORD	7.31	53	9.93	3	4.93	18	12.85	44	10.89	23	7.20	71
MELROSE	9.03	37	7.65	50	4.65	29	13.94	31	10.77	28	7.63	26
METHUEN	8.17	44	8.37	21	3.57	97	10.32	72	10.24	64	6.44	104
MIDDLESEX COUNTY	7.15	54	8.17	27	3.76	88	13.62	37	10.62	36	7.30	63
MILFORD	4.92	73	6.72	81	4.49	40	14.54	29	10.77	29	7.58	27
MILTON	4.82	82	N/A	N/A	5.91	2	9.61	78	N/A	N/A	7.26	66
MINUTEMAN REG VO	4.82	83	N/A	N/A	5.30	14	9.61	79	N/A	N/A	7.91	10
MONTAGUE	4.94	72	N/A	N/A	4.54	36	9.77	74	N/A	N/A	6.91	90
NATICK	11.07	11	6.54	86	4.94	17	18.96	2	9.59	87	7.36	52
NEEDHAM	4.79	85	N/A	N/A	3.78	86	9.59	82	N/A	N/A	7.91	11
NEW BEDFORD	7.35	52	6.69	82	4.29	57	7.15	98	9.99	78	7.50	37
NEWBURYPORT	3.97	94	7.20	68	4.63	30	15.36	25	10.39	53	7.20	72
NEWTON	9.00	38	8.00	34	1.61	107	11.33	60	10.78	27	7.35	53
NORFOLK COUNTY	4.79	86	N/A	N/A	4.58	33	9.53	87	N/A	N/A	7.30	64
NORTH ADAMS	-3.47	103	10.69	2	5.46	11	17.50	6	10.63	35	8.16	5
NORTH ATTLEBORO	4.89	75	7.41	59	4.32	56	11.70	58	10.17	68	7.32	59
NORTHAMPTON	-1.47	100	9.17	6	6.52	1	16.87	9	10.40	52	8.33	2
NORTHBRIDGE	4.95	71	N/A	N/A	5.80	3	9.58	84	N/A	N/A	7.41	45
NORWOOD	5.55	65	7.52	53	4.09	71	13.85	33	10.15	69	7.09	82
PEABODY	9.53	33	8.28	23	3.81	85	12.44	50	10.49	43	6.54	103
PITTSFIELD	10.15	25	7.97	37	4.72	28	13.91	32	10.28	61	7.54	31
PLYMOUTH	6.04	62	8.01	33	5.64	7	14.55	28	11.37	12	7.56	28
PLYMOUTH COUNTY	10.99	12	9.87	4	3.71	91	6.46	99	11.84	4	7.17	76
PRIM BOARD	3.97	95	6.35	89	3.54	99	10.16	73	8.81	91	7.24	69
QUINCY	10.19	24	8.26	24	4.74	27	10.50	69	10.04	77	7.40	47

Retirement System	..... Past Year .....						..... Past Five Years					
	Equity		Fixed Income		Cash equivalents		Equity		Fixed Income		Cash equivalents	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank
READING	4.90	74	N/A	N/A	4.43	46	10.65	66	3.20	92	7.17	77
REVERE	10.15	26	7.13	70	3.48	102	6.00	100	10.39	54	6.78	95
SALEM	6.43	58	7.87	43	3.90	78	8.68	93	10.23	65	7.40	48
SAUGUS	5.05	68	N/A	N/A	4.34	55	9.71	75	N/A	N/A	6.32	105
SHREWSBURY	4.83	80	N/A	N/A	4.76	25	9.60	81	N/A	N/A	7.76	15
SOMERVILLE	10.43	19	7.46	55	3.85	81	12.00	55	11.52	7	7.33	58
SOUTHBRIDGE	10.53	17	8.06	29	4.55	35	-2.54	107	10.46	48	7.19	73
SPRINGFIELD	5.66	64	7.42	58	5.05	15	18.49	4	10.14	70	7.71	18
STATE	5.54	67	N/A	N/A	3.76	89	10.35	71	N/A	N/A	6.55	102
STATE TEACHERS	6.23	61	N/A	N/A	4.82	23	10.73	64	N/A	N/A	7.13	81
STONEHAM	9.81	31	6.45	87	4.56	34	10.94	63	10.74	30	7.17	78
SWAMPSCOTT	-7.00	106	8.56	19	5.58	9	17.24	8	11.17	16	6.85	92
TAUNTON	7.65	50	9.13	9	4.29	58	13.38	40	11.50	8	7.05	85
WAKEFIELD	4.79	87	N/A	N/A	3.88	79	9.44	88	N/A	N/A	6.61	101
WALTHAM	8.64	40	7.08	73	4.92	20	15.54	22	10.12	72	7.66	20
WATERTOWN	3.77	97	9.06	10	3.52	100	9.27	90	10.73	31	7.52	35
WEBSTER	3.78	96	8.03	32	4.44	45	1.46	105	11.35	13	7.38	51
WELLESLEY	9.49	35	8.67	17	3.99	77	13.78	34	12.07	2	7.56	29
WEST SPRINGFIELD	10.43	20	8.04	30	5.67	4	15.60	20	10.60	37	8.04	7
WESTFIELD	11.20	9	7.24	65	3.67	93	14.36	30	10.56	40	7.04	86
WEYMOUTH	4.68	89	N/A	N/A	4.25	61	9.59	83	N/A	N/A	7.56	30
WINCHESTER	11.25	8	8.10	28	4.63	31	12.81	45	11.11	18	7.77	14
WINTHROP	8.75	39	7.54	51	4.13	69	14.64	27	10.56	39	7.54	32
WOBURN	10.49	18	7.92	39	4.11	70	10.47	70	10.87	25	7.19	74
WORCESTER	10.00	28	6.65	84	4.50	39	11.24	61	9.60	86	7.22	70
WORCESTER COUNTY	6.42	59	8.70	16	4.04	74	1.22	106	11.35	14	7.35	54

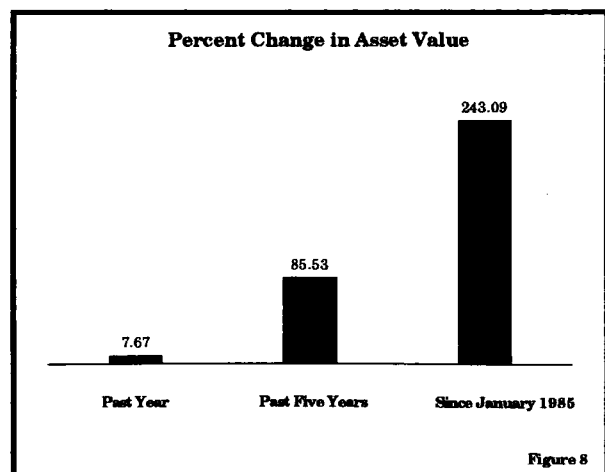
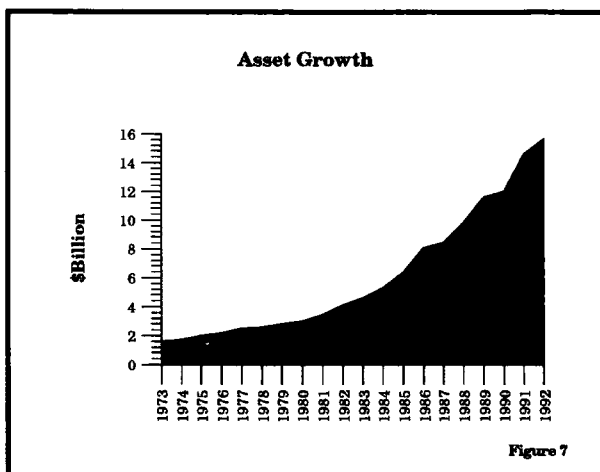
PART III:

ASSET GROWTH AND EMPLOYEE AND EMPLOYER CONTRIBUTIONS

Since 1988 the method of financing pension benefits in Massachusetts has changed dramatically. Today, most retirement systems are in the midst of a transition from “pay as you go” financing to funding benefits on an actuarial basis. Recently, many systems have accelerated this transition by receiving legislative authority to make pension appropriations in an amount equal to that set forth in an actuarial funding schedule.

It is of the utmost importance that public officials, retirement administrators, employees and retirees understand the implications of this change. Previously, a direct relationship existed between the employer appropriation and the benefits to be paid. Under actuarially based funding the appropriation will be determined at first by the unfunded liability and the cost of future benefits to be paid to active employees. However, the appropriation will fluctuate depending on the degree to which the system’s actual experience matches the expected experience used to develop the funding schedule. One of the factors which will determine the level of appropriation will be the investment activities of the system. To the extent investment return exceeds the assumption used in developing the schedule an actuarial gain takes place. To the extent investment return is below that assumption an actuarial loss takes place. Gains and losses are incorporated into the funding schedule on a 15 year basis and will lead to higher or lower levels of appropriation over that period. In 1992 Lynn suffered a loss in assets of 1.26%, and Saugus suffered a loss in assets of 1.50%. In both instances these losses will increase future appropriations.

The starting point for analyzing the fiscal condition of our retirement systems is the market value of assets. On December 31, 1984 assets totaled \$4.6 billion. As of December 31, 1992, that total was \$15.68 billion, an increase of 243.09%. (See Figures 7 and 8). The table that follows contains the assets of each of the retirement systems as of December 31, 1992 as well as the growth in assets over the past year, past five years and past eight years.



**Annual Report of the
Massachusetts Contributory Retirement Systems
for the year ending December 31, 1992**

Table Five

Asset Growth

Page One

Retirement System	December 31, 1992 Total Asset Value		Percent Change.....							
	Market	Rank	Past Year		Past Five Years		Since January 1, 1985			
			Percent	Rank	Percent	Rank	Percent	Rank	Percent	Rank
ADAMS	7,248,099.95	95	8.22	59	105.32	25	267.97	12		
AMESBURY	12,855,962.49	87	9.71	36	118.69	11	274.53	10		
ANDOVER	24,732,519.38	59	7.96	65	133.87	4	316.29	4		
ARLINGTON	53,714,155.52	29	8.66	55	75.13	74	176.07	69		
ATHOL	5,495,494.43	100	16.70	5	93.99	44	196.48	53		
ATTLEBORO	20,786,686.84	68	7.45	73	90.87	51	204.63	45		
BARNSTABLE COUNTY	96,693,984.13	15	19.24	3	116.77	13	226.26	33		
BELMONT	24,288,286.65	60	9.05	45	71.94	82	135.33	95		
BERKSHIRE COUNTY	27,823,708.22	55	14.59	6	91.00	50	224.50	34		
BEVERLY	25,797,555.75	57	5.63	90	95.47	38	155.03	83		
BLUE HILLS REG VO	3,098,995.36	106	3.34	100	57.34	98	142.58	91		
BOSTON	1,276,384,484.59	4	7.87	67	92.77	47	201.22	49		
BRAINTREE	39,227,762.89	39	10.12	34	98.46	34	264.75	14		
BRISTOL COUNTY	83,664,801.84	18	9.57	39	95.13	40	198.97	50		
BROCKTON	71,645,991.77	20	6.17	84	43.59	106	128.23	100		
BROOKLINE	69,850,239.89	21	9.16	43	89.21	57	180.79	66		
CAMBRIDGE	150,775,049.38	7	13.47	9	71.65	83	190.30	58		
CHELSEA	21,286,587.77	66	7.20	77	70.14	84	154.20	85		
CHICOPEE	45,988,346.23	34	8.84	52	81.61	65	138.45	93		
CLINTON	6,084,594.97	98	10.93	27	59.35	96	143.67	89		
CONCORD	18,215,546.13	75	13.47	10	108.36	20	203.36	47		
DANVERS	30,309,629.69	52	10.16	32	90.40	54	164.53	77		
DEDHAM	15,242,595.27	82	9.61	38	74.42	76	183.72	61		
DUKES COUNTY	7,936,196.97	94	20.04	2	125.02	8	219.46	37		
EASTHAMPTON	9,280,148.83	93	8.21	60	125.11	7	297.37	7		
ESSEX COUNTY	69,832,354.85	22	14.48	7	99.14	32	194.64	54		
EVERETT	29,409,049.23	54	3.60	99	77.16	72	122.90	103		

Retirement System	December 31, 1992		Percent Change.....					
	Total Asset Value	Rank	Past Year	Rank	Past Five Years	Rank	Since January 1, 1985	Rank
	Market		Percent		Percent		Percent	
FAIRHAVEN	6,840,719.18	96	6.11	85	74.52	75	170.44	74
FALL RIVER	87,488,536.55	17	9.24	42	98.36	35	243.23	22
FALMOUTH	20,676,742.48	69	10.00	35	180.85	1	315.18	5
FITCHBURG	31,694,935.93	46	4.14	99	135.91	3	220.15	36
FRAMINGHAM	51,075,794.43	31	9.70	37	94.26	43	220.64	35
FRANKLIN COUNTY	15,991,776.68	79	10.93	28	94.72	41	202.17	48
GARDNER	10,993,945.91	90	5.76	87	94.51	42	159.33	80
GLOUCESTER	22,298,486.67	62	8.46	56	90.15	55	205.66	44
GREATER LAWRENCE	3,330,814.49	105	14.30	8	102.87	28	207.36	43
GREENFIELD	12,243,755.98	88	12.97	11	109.68	19	233.20	27
HAMPDEN COUNTY	68,256,776.57	23	12.30	16	92.69	48	211.20	40
HAMPSHIRE COUNTY	42,516,693.92	37	11.63	19	93.83	45	180.96	65
HAVERHILL	52,001,415.90	30	11.26	22	114.03	15	280.99	8
HINGHAM	14,806,910.60	83	7.28	76	75.70	73	138.90	92
HOLYOKE	50,547,999.59	32	6.02	86	58.07	97	154.61	84
HULL	6,197,859.13	97	8.86	51	62.93	94	122.01	105
LAWRENCE	47,558,458.49	33	1.21	105	89.37	56	178.36	67
LEOMINSTER	21,406,657.67	65	5.04	92	88.36	59	216.44	38
LEXINGTON	31,166,294.74	50	9.31	41	95.97	37	210.83	41
LOWELL	57,299,950.83	26	7.48	72	60.96	95	142.76	90
LYNN	80,498,970.28	19	-1.26	106	74.04	78	213.66	39
MALDEN	37,940,917.68	42	11.53	21	95.44	39	160.70	79
MARBLEHEAD	22,010,706.63	63	3.62	98	107.78	21	172.74	70
MARLBOROUGH	19,613,031.75	71	10.28	31	91.87	49	233.82	26
MASS HOUSING FINA	15,267,298.56	81	9.00	47	127.56	5	234.68	25
MASS PORT AUTH	117,354,543.28	12	11.23	23	111.41	17	252.47	17
MASS TURNPIKE AUT	90,096,162.48	16	8.43	58	100.07	30	265.75	13

Retirement System	December 31, 1992		Percent Change.....					
	Total Asset Value	Rank	Past Year	Past Five Years	Since January 1, 1985	Past Year	Past Five Years	Since January 1, 1985
	Market	Rank	Percent	Rank	Percent	Rank	Percent	Rank
MASS WATER RESOUR	21,437,935.01	64	41.32	1	N/A	N/A	N/A	N/A
MAYNARD	5,258,298.26	101	12.65	14	53.02	101	135.32	96
MEDFORD	45,382,587.37	35	10.72	29	80.64	67	197.94	52
MELROSE	18,652,455.97	74	4.83	93	45.33	105	122.81	104
METHUEN	24,870,550.83	58	10.94	25	125.51	6	275.74	9
MIDDLESEX COUNTY	263,172,012.24	5	10.54	30	103.73	26	226.97	32
MILFORD	16,337,197.91	77	10.16	33	111.53	16	251.50	18
MILTON	20,834,392.68	67	2.79	102	63.61	92	163.89	78
MINUTEMAN REG VO	2,806,363.39	107	9.32	40	119.13	9	419.65	2
MONTAGUE	4,356,291.20	103	7.45	74	90.45	52	169.55	75
NATICK	31,592,561.51	47	9.12	44	114.83	14	228.65	29
NEEDHAM	35,871,667.38	45	6.96	80	73.72	79	256.26	16
NEW BEDFORD	63,866,354.94	24	11.10	24	49.07	104	138.25	94
NEWBURYPORT	11,534,223.81	89	7.93	66	107.50	22	237.73	24
NEWTON	109,698,516.24	13	6.69	81	51.63	102	108.45	106
NORFOLK COUNTY	148,529,569.01	8	7.55	70	84.82	61	191.30	57
NORTH ADAMS	13,141,944.39	86	8.44	57	111.20	18	228.36	30
NORTH ATTLEBORO	14,241,558.27	84	8.18	62	98.97	33	240.89	23
NORTHAMPTON	16,090,701.16	78	4.15	95	105.87	23	171.37	72
NORTHBRIDGE	3,890,415.94	104	6.51	82	50.83	103	127.66	101
NORWOOD	42,050,523.96	38	8.96	48	96.22	36	243.72	21
PEABODY	43,598,896.30	36	8.87	50	93.01	46	207.64	42
PITTSFIELD	38,948,205.26	40	7.83	68	63.56	93	152.60	86
PLYMOUTH	30,472,396.43	51	7.44	75	117.15	12	256.65	15
PLYMOUTH COUNTY	148,486,880.75	9	12.82	12	105.45	24	244.76	20
PRIM BOARD	3,648,138,585.77	3	8.14	63	80.15	68	637.29	1
QUINCY	100,599,570.49	14	11.61	20	84.49	63	168.99	76

Retirement System	December 31, 1992 Total Asset Value		Percent Change.....					
	Market	Rank	Past Year Percent	Rank	Past Five Years Percent	Rank	Since January 1, 1985 Percent	Rank
READING	19,497,211.19	72	7.02	78	84.74	62	176.18	68
REVERE	31,473,173.95	49	5.65	89	79.00	70	182.65	63
SALEM	36,131,663.94	44	8.20	61	63.67	91	181.01	64
SAUGUS	13,688,838.27	85	-1.50	107	66.83	88	157.31	81
SHREWSBURY	15,887,535.29	80	7.00	79	72.00	81	192.65	55
SOMERVILLE	55,921,601.63	27	12.32	15	56.23	100	171.60	71
SOUTHBRIDGE	5,970,666.93	99	10.94	26	69.08	86	125.02	102
SPRINGFIELD	137,180,767.77	10	5.58	91	81.48	66	170.58	73
STATE	4,978,174,822.76	2	6.50	83	82.30	64	310.84	6
STATE TEACHERS	5,148,105,303.24	1	7.74	69	85.99	60	247.27	19
STONEHAM	18,911,329.84	73	12.09	18	72.69	80	192.49	56
SWAMPSCOTT	10,586,594.95	91	3.75	97	99.27	31	189.05	59
TAUNTON	38,944,880.10	41	8.83	53	88.54	58	227.16	31
WAKEFIELD	20,554,989.96	70	4.74	94	64.86	89	147.87	87
WALTHAM	61,281,111.63	25	3.02	101	79.41	69	198.19	51
WATERTOWN	29,640,460.11	53	5.68	88	90.44	53	182.70	62
WEBSTER	5,021,240.71	102	8.05	64	69.86	85	130.53	98
WELLESLEY	55,346,834.69	28	8.81	54	170.43	2	407.64	3
WEST SPRINGFIELD	17,255,683.00	76	17.41	4	103.54	27	129.70	99
WESTFIELD	36,986,419.49	43	12.11	17	119.00	10	274.38	11
WEYMOUTH	31,554,555.84	48	7.49	71	67.04	87	147.46	88
WINCHESTER	23,625,200.87	61	8.88	49	101.03	29	229.90	28
WINTHROP	9,326,821.50	92	1.90	104	57.10	99	131.66	97
WOBURN	27,589,159.39	56	12.74	13	74.38	77	204.31	46
WORCESTER	161,824,570.16	6	2.71	103	63.83	90	155.74	82
WORCESTER COUNTY	129,687,274.87	11	9.04	46	78.17	71	184.14	60
MASS. RETIREMENT SYSTEMS	15,680,735,768.20		7.67		85.53		243.09	

PART IV:

FEES AND TURNOVER

This part of the report focuses attention on the expenses involved in the activity of the Boards. In most systems, the responsibility for day to day management of the portfolio is delegated to professional money managers. PERA requires that such managers meet strict standards. In addition, custody costs and consultant fees are incurred in the normal course of investing by Retirement Boards. These costs may be paid from investment earnings or paid from appropriations. The return of those systems paying expenses from earnings is reduced by such costs. However, nationwide and in Massachusetts the use of investment earnings is the most common method of paying for these costs. Table Six contains the gross returns of the retirement systems and the net returns of the retirement systems after expenses, as reported by the systems, have been paid from earnings. Following the gross and net returns are the amounts paid for management advice, custody costs and consultant fees. In evaluating these costs, PERA is seeking to make systems aware of the need to control these expenses.

The same is true in analyzing the turnover in a portfolio. Turnover rates must be judged based on the performance of the portfolio. High turnover rates increase trading costs, consequently, a high level of buying and selling must be justified by performance. As a general principle, such turnover does not enhance performance, however, each manager must be assessed on his or her performance. Table Seven contains turnover rates of the stock and bond portfolios of the retirement systems.

Please note:

- The administrative expenses of the PRIT Fund have been paid from the earnings of the PRIT Fund unlike the retirement systems which pay these expenses from budgeted funds. This will lower the net return reported by the PRIT Fund. This will also lower the net return of the retirement systems investing in the PRIT Fund.
- The administrative expenses of the PRIT Fund have been categorized as management fees. The adjusted fees of the PRIT Fund, which exclude administrative expenses, represent .49% of the portfolio.

- The Investment Committee of the State Treasurer administers the MASTERS Trust for the State Employees' and Teachers' Retirement Systems. The gross return as reported by the Office of the Treasurer was 6.17% and the net return 6.03%, a difference of 14 basis points. These returns differ from those reported for the State Employees' and Teachers' Retirement Systems because they exclude the funds invested by these retirement systems with the PRIT Fund. In addition, the MASTERS Trust pays for administrative and other operating expenses from earnings which is reflected in a lower net return for the State Employees' and Teachers' Retirement Systems than if they had not been paid from earnings. Retirement systems generally do not pay these costs from earnings.
- The administrative expenses and other operating expenses of the MASTERS Trust have been categorized as management fees for the State Employees' and Teachers' Retirement Systems. The adjusted fees of the State Employees' and Teachers' Retirement Systems, adjusted for the administrative and other operating expenses of the PRIT Fund and the MASTERS Trust, represent .29% and .26% of the portfolios, respectively.
- Management fees for those retirement systems which use BayBanks and U.S. Trust as manager and custodian include custody fees.
- Information regarding expenses was derived from the records of the retirement systems, the PRIT Fund and the Office of the Treasurer.
- With respect to systems investing in shares of mutual funds, limited partnerships, group trusts, etc., the turnover data reflects the purchase and redemption of units and does not reflect the buying and selling of stocks and bonds.

Statewide in 1992, the gross return was 6.45% and the net return 6.11%, a difference of 34 basis points. Statewide, \$39,356,023.01 was paid in management fees, \$6,075,996.26 was paid in custody fees and \$1,286,647.02 was paid in consulting fees (adjusted to exclude administrative and operating costs.)

**Annual Report of the
Massachusetts Contributory Retirement Systems
for the year ending December 31, 1992**

Table Six		Gross and Net Performance / Management, Custodian Bank and Consultant Fees						Page One
<u>Retirement System</u>	<u>..... Gross and Net Performance</u>			<u>.....Management, Custodian Bank and Consultant Fees</u>				
	<u>Gross</u>	<u>Net</u>	<u>Basis Point Difference</u>	<u>Management Fees</u>	<u>Custodian Bank Fees</u>	<u>Consultant Fees</u>	<u>As a % of Market Value</u>	
ADAMS	9.04	8.76	28	18,190.00	7,299.18	0.00	0.35	
AMESBURY	6.36	6.23	13	15,000.00	11,864.17	8,795.68	0.28	
ANDOVER	1.08	0.91	17	40,000.00	11,406.00	0.00	0.21	
ARLINGTON	8.33	8.06	27	109,035.43	16,202.51	0.00	0.23	
ATHOL	6.50	6.14	36	16,966.49	3,764.03	0.00	0.38	
ATTLEBORO	6.48	6.26	22	42,673.01	0.00	0.00	0.21	
BARNSTABLE COUNTY	7.45	7.09	36	293,586.67	11,271.00	14,000.00	0.33	
BELMONT	10.44	9.92	52	110,086.65	22,511.88	7,533.82	0.58	
BERKSHIRE COUNTY	9.49	9.47	2	3,539.42	4,989.98	80.00	0.03	
BEVERLY	5.66	5.16	50	83,319.29	22,757.37	15,750.00	0.47	
BLUE HILLS REG VO	9.84	9.07	77	21,184.94	0.00	0.00	0.68	
BOSTON	5.41	5.09	32	3,068,029.56	677,900.14	94,853.00	0.30	
BRAINTREE	7.42	7.02	40	140,285.18	31,106.60	0.00	0.44	
BRISTOL COUNTY	6.22	5.99	23	175,683.12	0.00	0.00	0.21	
BROCKTON	8.57	8.03	54	345,927.13	69,135.89	47,666.67	0.65	
BROOKLINE	10.01	9.64	37	172,515.60	30,997.00	18,539.66	0.32	
CAMBRIDGE	9.74	9.20	54	699,655.77	0.00	0.00	0.46	
CHELSEA	6.45	6.12	33	63,753.90	0.00	0.00	0.30	
CHICOPEE	8.60	8.12	48	185,887.89	36,434.40	0.00	0.48	
CLINTON	8.01	7.36	65	32,963.35	0.00	0.00	0.54	
CONCORD	8.47	8.08	39	57,510.59	9,644.82	153.21	0.37	
DANVERS	6.57	6.57	0	72,028.77	10,039.08	8.97	0.27	
DEDHAM	4.84	4.23	61	71,172.64	7,007.71	1,608.78	0.52	
DUKES COUNTY	6.91	6.82	9	6,216.08	0.00	0.00	0.08	
EASTHAMPTON	7.80	7.50	30	35,000.00	0.00	0.00	0.38	
ESSEX COUNTY	8.43	7.94	49	294,203.00	33,857.71	13,500.00	0.49	
EVERETT	7.07	6.83	24	67,158.80	0.00	0.00	0.23	

Retirement System	..... Gross and Net Performance .....			.....Management, Custodian Bank and Consultant Fees			
	Gross	Net	Basis Point Difference	Management Fees	Custodian Bank Fees	Consultant Fees	As a % of Market Value
FAIRHAVEN	4.88	4.29	59	31,483.46	3,099.88	711.65	0.52
FALL RIVER	5.91	5.72	19	156,622.65	0.00	0.00	0.18
FALMOUTH	6.32	6.08	24	47,820.09	0.00	0.00	0.23
FITCHBURG	5.43	5.43	0	46,309.75	0.00	0.00	0.15
FRAMINGHAM	8.32	7.90	42	174,670.09	5,128.63	1,177.39	0.35
FRANKLIN COUNTY	8.51	8.08	43	62,523.00	4,043.05	0.00	0.42
GARDNER	4.82	4.23	59	50,092.86	4,932.18	1,132.29	0.51
GLOUCESTER	9.17	8.65	52	88,980.91	11,844.22	16.95	0.45
GREATER LAWRENCE	8.02	7.36	66	18,896.49	0.00	0.00	0.57
GREENFIELD	10.33	10.25	8	46,199.88	7,825.07	6,912.46	0.50
HAVERHILL	9.19	8.56	63	284,524.06	40,084.83	0.00	0.62
HINGHAM	4.78	4.19	59	69,135.63	6,807.15	1,562.73	0.52
HOLYOKE	8.60	8.19	41	186,022.00	14,873.19	0.00	0.40
HAMPDEN COUNTY	8.70	8.29	41	221,591.69	19,375.00	1,250.00	0.35
HAMPSHIRE COUNTY	7.75	7.66	9	197,830.19	28,879.32	0.00	0.53
HULL	7.93	7.42	51	26,539.55	1,380.00	0.00	0.45
LAWRENCE	2.03	1.61	42	174,831.00	10,230.00	0.00	0.39
LEOMINSTER	6.67	6.67	0	31,080.00	10,040.00	0.00	0.19
LEXINGTON	8.20	7.75	45	120,620.92	17,500.00	0.00	0.44
LOWELL	7.94	7.36	58	257,932.12	38,489.01	76.55	0.52
LYNN	1.39	1.08	31	211,514.00	19,692.01	0.00	0.29
MASS TURNPIKE AUT	7.81	7.68	13	52,250.00	25,099.09	32,250.00	0.12
MALDEN	2.87	2.58	29	97,767.00	9,211.22	0.00	0.28
MARBLEHEAD	2.04	1.71	33	66,354.00	11,000.00	0.00	0.35
MARLBOROUGH	8.54	8.10	44	75,983.00	11,912.23	1,225.00	0.45
MAYNARD	7.68	7.42	26	11,796.48	0.00	0.00	0.22
MEDFORD	8.47	8.06	41	91,012.58	33,640.79	41,667.45	0.37

Retirement System	..... Gross and Net Performance .....			.....Management, Custodian Bank and Consultant Fees			
	Gross	Net	Basis Point Difference	Management Fees	Custodian Bank Fees	Consultant Fees	As a % of Market Value
MELROSE	7.76	7.50	26	44,100.94	8,465.69	0.00	0.28
METHUEN	7.44	7.33	11	77,838.32	13,911.79	448.94	0.37
MASS HOUSING FINA	4.80	4.21	59	69,387.57	6,831.95	1,568.43	0.51
MIDDLESEX COUNTY	7.25	6.62	63	1,215,231.49	172,558.52	93,750.00	0.56
MILFORD	6.12	6.12	0	33,370.59	0.00	0.00	0.20
MILTON	4.88	4.28	60	100,416.04	9,887.04	2,269.79	0.54
MINUTEMAN REG VO	4.89	4.29	60	12,890.92	1,269.25	291.38	0.51
MONTAGUE	4.86	4.27	59	19,403.44	1,910.48	438.59	0.50
MASS PORT AUTH	7.91	7.91	0	87,297.79	35,664.66	0.00	0.10
MASS WATER RESOUR	7.00	6.99	1	36,094.20	1,517.60	48.56	0.18
NATICK	9.03	8.78	25	50,156.10	15,500.00	0.00	0.21
NEEDHAM	4.78	4.18	60	169,969.02	16,735.28	3,841.96	0.53
NEW BEDFORD	6.03	5.64	39	212,770.81	43,295.84	11,594.13	0.42
NEWTON	8.23	7.68	55	454,489.06	94,977.21	25,500.00	0.52
NORFOLK COUNTY	4.82	4.22	60	702,664.07	69,184.83	15,882.92	0.53
NORWOOD	6.84	6.72	12	39,765.06	12,327.29	0.00	0.12
NORTH ADAMS	3.96	3.57	39	39,619.00	6,059.66	0.00	0.35
NORTH ATTLEBORO	5.86	5.42	44	44,867.26	9,214.31	7,807.03	0.43
NORTHBRIDGE	4.92	4.32	60	17,796.62	1,752.27	402.27	0.51
NORTHAMPTON	3.70	3.29	41	50,645.00	12,261.13	0.00	0.39
NEWBURYPORT	5.98	5.61	37	29,890.80	12,477.48	0.00	0.37
PEABODY	8.56	8.11	45	157,651.00	19,368.36	0.00	0.41
PLYMOUTH COUNTY	8.92	8.89	3	39,394.00	26,147.77	0.00	0.04
PLYMOUTH	7.49	7.36	13	35,283.71	0.00	10,125.00	0.15
PRIM BOARD	4.77	4.20	57	17,305,575.76	1,703,920.00	391,172.76	0.53
PITTSFIELD	8.66	8.22	44	136,735.00	15,000.00	0.00	0.39
QUINCY	9.14	8.82	32	284,267.59	29,109.11	129.57	0.31

Retirement System	..... Gross and Net Performance .....			.....Management, Custodian Bank and Consultant Fees			
	Gross	Net	Basis Point Difference	Management Fees	Custodian Bank Fees	Consultant Fees	As a % of Market Value
READING	4.87	4.26	61	89,820.99	8,843.84	2,030.30	0.52
REVERE	7.42	7.42	0	113,525.66	23,840.72	0.00	0.44
SALEM	6.92	6.35	57	154,724.91	22,714.77	31,584.69	0.58
SAUGUS	5.00	4.41	59	65,383.35	6,437.69	1,477.92	0.54
SHREWSBURY	4.80	4.19	61	74,472.53	7,332.62	1,683.37	0.53
SOMERVILLE	5.91	5.76	15	91,030.42	5,416.67	0.00	0.17
SPRINGFIELD	7.25	7.01	24	176,618.32	92,880.63	30,000.00	0.22
STATE TEACHERS	6.14	5.82	32	12,995,103.76	1,793,186.93	248,726.25	0.29
STATE	5.53	5.17	36	14,100,478.89	1,825,389.57	280,258.30	0.33
SOUTHBRIDGE	9.07	8.59	48	25,471.00	9,444.95	0.00	0.58
STONEHAM	7.89	7.35	54	90,032.70	7,312.50	10,437.38	0.57
SWAMPSCOTT	2.09	1.66	43	36,637.60	7,363.80	0.00	0.42
TAUNTON	8.26	7.87	39	134,441.34	3,839.39	0.00	0.36
WAKEFIELD	4.82	4.21	61	96,736.30	9,524.73	2,186.61	0.53
WALTHAM	8.17	8.17	0	127,288.04	0.00	0.00	0.21
WATERTOWN	6.23	5.76	47	111,055.70	30,360.20	16,500.00	0.53
WEBSTER	3.94	3.44	50	22,406.87	596.65	7,445.00	0.61
WELLESLEY	8.96	8.39	57	241,683.50	31,239.14	5,200.00	0.50
WEYMOUTH	4.69	4.09	60	147,606.47	14,533.44	3,336.48	0.52
WINCHESTER	9.29	8.78	51	73,266.00	20,889.11	24,651.56	0.50
WINTHROP	7.87	7.79	8	6,810.14	25,226.21	0.00	0.34
WOBURN	8.66	8.33	33	79,280.00	24,168.12	0.00	0.37
WORCESTER	7.98	7.70	28	336,388.19	14,224.70	66,558.33	0.26
WORCESTER COUNTY	7.87	7.46	41	340,405.92	61,017.23	70,000.00	0.36
WEST SPRINGFIELD	8.73	8.51	22	32,995.00	13,610.00	0.00	0.27
WESTFIELD	8.87	8.36	51	158,135.00	27,898.79	0.00	0.50

**Annual Report of the
Massachusetts Contributory Retirement Systems
for the year ending December 31, 1992**

Table Seven

Portfolio Turnover

Page One

Retirement System	Equity Turnover				Fixed Income Turnover			
	Total Purchases	% of Avg. Market Value	Total Sales	% of Avg. Market Value	Total Purchases	% of Beg. Market Value	Total Sales	% of Beg. Market Value
ADAMS	854,202.15	47.41	689,492.58	38.27	1,465,670.00	33.55	1,757,592.50	40.24
AMESBURY	1,901,587.00	46.70	975,395.63	23.95	1,142,113.25	18.09	875,525.77	13.87
ANDOVER	4,443,880.25	41.30	4,977,619.32	46.26	15,627,929.42	146.64	13,096,037.57	122.88
ARLINGTON	24,113,859.88	132.06	20,955,900.85	114.77	12,310,564.12	41.67	10,667,844.75	36.11
ATHOL	936,578.60	86.68	715,796.05	66.25	498,279.00	15.05	325,167.23	9.82
ATTLEBORO	3,342,181.88	51.48	3,227,458.32	49.71	8,585,190.23	82.98	6,929,773.36	66.98
BARNSTABLE COUNTY	24,488,620.38	53.89	19,680,371.49	43.31	76,215,776.48	385.42	56,876,341.06	287.62
BELMONT	6,372,718.57	52.11	2,570,925.16	21.02	11,633,774.67	104.15	13,381,298.81	119.80
BERKSHIRE COUNTY	58,866.49	2.68	0.00	0.00	5,468,997.94	25.63	3,731,536.02	17.49
BEVERLY	5,621,944.16	43.26	10,518,458.58	80.94	40,240,172.61	369.19	41,254,629.52	378.50
BLUE HILLS REG VO	502,923.89	53.10	172,654.28	18.23	1,039,493.32	54.50	1,099,883.32	57.66
BOSTON	226,996,431.68	31.11	201,655,906.17	27.64	813,937,615.57	287.79	728,166,005.60	257.46
BRAINTREE	3,260,927.15	55.22	1,799,464.98	30.47	28,109,775.96	132.32	26,593,254.56	125.19
BRISTOL COUNTY	13,888,925.59	66.20	12,690,337.66	60.48	36,925,773.81	77.82	31,849,192.60	67.12
BROCKTON	37,743,751.95	127.98	43,281,829.20	146.75	21,184,348.24	67.55	17,914,422.24	57.13
BROOKLINE	19,960,554.60	69.07	19,343,896.41	66.94	65,903,855.80	205.83	61,098,715.24	190.83
CAMBRIDGE	44,673,616.47	55.76	63,784,149.11	79.61	49,313,254.24	171.70	24,648,706.88	85.82
CHELSEA	4,634,898.96	67.06	4,271,938.68	61.81	4,645,740.83	36.55	4,708,604.45	37.04
CHICOPEE	20,390,280.81	105.60	15,744,569.42	81.54	7,780,493.18	45.42	9,441,990.62	55.12
CLINTON	520,000.00	9.63	32,963.35	0.61	0.00	0.00	0.00	0.00
CONCORD	1,252,942.51	18.75	1,104,998.80	16.54	1,840,193.87	22.43	1,139,094.24	13.88
DANVERS	5,108,352.23	46.72	1,901,414.67	17.39	2,898,540.13	18.21	2,244,335.45	14.10
DEDHAM	1,911,558.05	13.28	51,213.88	0.36	0.00	0.00	0.00	0.00
DUKES COUNTY	741,638.39	150.32	89,382.07	18.12	3,164,491.65	230.52	684,258.40	49.85
EASTHAMPTON	627,870.50	38.14	643,174.58	39.07	1,328,009.37	20.64	457,021.27	7.10
ESSEX COUNTY	27,997,923.51	98.23	26,620,075.71	93.40	24,729,431.04	103.28	21,108,776.90	88.16
EVERETT	9,128,451.15	75.69	7,794,455.14	64.63	11,582,116.57	68.43	13,174,006.47	77.84

<u>Retirement System</u>	<u>Equity Turnover</u>				<u>Fixed Income Turnover</u>			
	<u>Total Purchases</u>	<u>% of Avg. Market Value</u>	<u>Total Sales</u>	<u>% of Avg. Market Value</u>	<u>Total Purchases</u>	<u>% of Beg. Market Value</u>	<u>Total Sales</u>	<u>% of Beg. Market Value</u>
FAIRHAVEN	1,273,521.54	20.91	537,610.06	8.83	0.00	0.00	0.00	0.00
FALL RIVER	18,096,894.18	71.00	16,470,154.21	64.62	37,901,521.53	69.01	36,584,551.92	66.62
FALMOUTH	2,911,902.50	27.79	278,113.21	2.65	199,625.00	2.13	1,262,845.08	13.45
FITCHBURG	3,109,217.98	29.36	1,295,712.71	12.23	4,454,618.57	28.50	4,257,004.81	27.24
FRAMINGHAM	3,266,293.27	6.88	4,269,082.04	9.00	0.00	0.00	829.84	7.06
FRANKLIN COUNTY	7,212,049.24	138.53	5,209,225.47	100.06	4,777,883.00	53.27	5,643,189.82	62.92
GARDNER	1,945,072.51	20.56	915,745.64	9.68	0.00	0.00	0.00	0.00
GLOUCESTER	11,379,342.48	108.67	11,722,116.51	111.94	5,419,648.09	55.61	4,993,026.76	51.24
GREATER LAWRENCE	671,916.77	69.68	291,601.37	30.24	722,948.23	40.20	528,848.62	29.41
GREENFIELD	3,465,541.45	87.90	3,087,018.36	78.30	8,029,335.50	201.51	4,855,133.61	121.85
HAVERHILL	23,041,072.62	93.72	21,063,893.80	85.67	21,549,390.66	102.47	20,626,095.63	98.08
HINGHAM	2,134,308.52	15.40	569,110.23	4.11	0.00	0.00	0.00	0.00
HOLYOKE	24,796,821.36	101.84	26,307,607.04	108.05	15,123,330.98	67.98	13,461,080.50	60.51
HAMPDEN COUNTY	28,167,533.87	101.42	22,151,992.72	79.76	15,184,717.19	45.10	15,817,395.69	46.97
HAMPSHIRE COUNTY	18,926,801.60	101.82	11,752,791.36	63.22	7,315,684.38	41.91	8,591,468.16	49.21
HULL	425,435.00	64.85	183,744.26	28.01	1,641,206.38	44.45	1,104,357.87	29.91
LAWRENCE	23,014,663.40	129.06	22,222,887.19	124.62	33,230,269.41	126.73	32,382,580.77	123.50
LEOMINSTER	2,809,610.40	39.33	1,055,816.62	14.78	5,289,856.08	49.94	3,713,497.73	35.06
LEXINGTON	5,597,532.35	34.70	3,720,210.76	23.06	3,518,629.38	28.39	3,421,383.25	27.60
LOWELL	13,434,981.64	56.62	9,882,413.74	41.65	98,134,697.45	419.80	96,824,848.75	414.19
LYNN	27,732,855.96	60.92	24,966,206.43	54.85	19,565,053.95	55.25	22,414,730.21	63.30
MASS TURNPIKE AUT	9,070,389.92	159.47	0.00	0.00	7,853,637.50	12.06	16,750,701.70	25.73
MALDEN	13,410,182.65	73.24	10,059,446.56	54.94	11,837,786.39	71.56	11,359,296.70	68.67
MARBLEHEAD	7,650,863.62	66.00	6,710,601.26	57.89	5,258,493.22	53.12	5,520,274.26	55.76
MARLBOROUGH	7,391,669.89	108.36	7,183,328.42	105.31	7,695,620.25	73.01	6,353,620.05	60.28
MAYNARD	771,726.82	67.50	597,895.86	52.30	2,954,306.73	110.68	2,272,639.23	85.14
MEDFORD	7,194,987.06	44.10	5,259,474.41	32.23	6,241,900.32	31.05	5,147,700.97	25.61

<u>Retirement System</u>	<u>Equity Turnover</u>				<u>Fixed Income Turnover</u>			
	<u>Total</u> <u>Purchases</u>	<u>% of Avg.</u> <u>Market Value</u>	<u>Total</u> <u>Sales</u>	<u>% of Avg.</u> <u>Market Value</u>	<u>Total</u> <u>Purchases</u>	<u>% of Beg.</u> <u>Market Value</u>	<u>Total</u> <u>Sales</u>	<u>% of Beg.</u> <u>Market Value</u>
MELROSE	3,811,865.90	56.83	3,196,730.47	47.66	1,409,553.06	14.83	1,851,637.06	19.48
METHUEN	6,906,772.72	70.33	5,958,032.82	60.67	6,643,404.77	72.91	4,024,122.81	44.16
MASS HOUSING FINA	1,750,648.44	12.58	0.00	0.00	0.00	0.00	0.00	0.00
MIDDLESEX COUNTY	58,529,964.38	46.49	57,575,484.79	45.73	69,039,608.91	70.14	61,591,303.60	62.57
MILFORD	3,424,635.76	59.01	3,758,247.12	64.76	6,131,440.23	78.06	4,686,127.74	59.66
MILTON	3,415,633.35	17.09	1,226,244.02	6.14	0.00	0.00	0.00	0.00
MINUTEMAN REG VO	556,611.19	22.43	0.00	0.00	0.00	0.00	0.00	0.00
MONTAGUE	1,054,459.37	26.41	499,103.37	12.50	0.00	0.00	0.00	0.00
MASS PORT AUTH	11,636,478.08	25.25	7,719,537.36	16.75	19,098,474.23	33.42	18,655,492.81	32.64
MASS WATER RESOUR	2,490,523.82	66.52	2,606,672.18	69.62	6,075,185.35	63.20	4,892,972.59	50.90
NATICK	3,574,211.00	23.69	1,223,133.89	8.11	3,046,093.75	23.59	2,065,312.50	15.99
NEEDHAM	5,006,628.55	14.79	2,066,490.43	6.11	0.00	0.00	0.00	0.00
NEW BEDFORD	21,733,166.58	82.11	38,079,859.37	143.87	139,762,779.12	689.80	134,192,939.82	662.31
NEWTON	96,774,204.33	169.80	92,716,410.79	162.68	32,204,240.61	97.20	24,973,703.32	75.37
NORFOLK COUNTY	21,450,822.93	15.39	5,234,039.63	3.76	0.00	0.00	0.00	0.00
NORWOOD	9,252,147.31	81.60	3,252,300.30	28.68	8,094,987.79	30.65	8,909,736.12	33.73
NORTH ADAMS	4,698,727.15	76.12	3,080,341.77	49.90	2,744,910.64	43.94	3,524,097.76	56.41
NORTH ATTLEBORO	5,906,458.13	122.03	4,063,632.90	83.96	5,016,712.56	66.98	5,403,011.44	72.14
NORTHBRIDGE	756,008.69	20.16	395,514.38	10.55	0.00	0.00	0.00	0.00
NORTHAMPTON	5,412,524.37	65.51	4,451,032.33	53.87	3,624,674.01	49.12	4,365,937.25	59.17
NEWBURYPORT	1,765,155.00	41.62	542,386.53	12.79	1,047,188.13	17.34	1,065,701.75	17.64
PEABODY	20,601,008.40	99.38	22,580,413.85	108.93	14,460,458.29	84.16	10,631,128.33	61.87
PLYMOUTH COUNTY	19,116,873.98	75.33	6,813,090.46	26.85	5,528,738.85	5.77	19,182,107.47	20.02
PLYMOUTH	5,214,717.50	33.11	443,589.46	2.82	1,359,480.00	9.83	4,449,345.82	32.17
PRIM BOARD	1,137,902,923.71	47.73	813,080,284.53	34.11	1,535,981,546.26	158.89	1,294,693,361.15	133.93
PITTSFIELD	14,891,090.49	110.40	14,478,203.58	107.34	14,501,505.82	79.38	11,125,729.19	60.90
QUINCY	14,772,493.12	32.70	9,617,526.99	21.29	146,560,633.87	360.58	144,224,154.16	354.83

<u>Retirement System</u>	<u>Equity Turnover</u>				<u>Fixed Income Turnover</u>			
	<u>Total</u> <u>Purchases</u>	<u>% of Avg.</u> <u>Market Value</u>	<u>Total</u> <u>Sales</u>	<u>% of Avg.</u> <u>Market Value</u>	<u>Total</u> <u>Purchases</u>	<u>% of Beg.</u> <u>Market Value</u>	<u>Total</u> <u>Sales</u>	<u>% of Beg.</u> <u>Market Value</u>
READING	3,410,074.62	19.06	1,268,730.81	7.09	0.00	0.00	0.00	0.00
REVERE	4,210,945.10	63.98	2,890,386.67	43.92	4,394,211.89	25.29	4,493,719.11	25.86
SALEM	10,387,130.04	86.39	9,968,868.47	82.91	17,180,754.80	91.82	16,417,053.49	87.74
SAUGUS	4,459,711.75	35.70	1,992,381.32	15.95	0.00	0.00	0.00	0.00
SHREWSBURY	2,516,771.90	16.71	931,898.41	6.19	0.00	0.00	0.00	0.00
SOMERVILLE	14,760,417.19	108.19	3,855,863.96	28.26	13,200,289.67	373.08	2,210,118.29	62.46
SPRINGFIELD	53,575,686.02	109.24	45,203,175.77	92.17	74,585,047.84	89.28	82,150,519.15	98.34
STATE TEACHERS	564,487,885.90	11.70	288,974,799.28	5.99	0.00	0.00	0.00	0.00
STATE	683,738,422.98	14.26	392,856,548.65	8.19	0.00	0.00	0.00	0.00
SOUTHBRIDGE	3,008,352.82	113.48	2,900,727.64	109.42	2,270,945.68	95.94	1,695,168.34	71.61
STONEHAM	5,870,306.00	91.22	5,719,799.52	88.88	10,881,239.87	126.90	8,177,399.23	95.37
SWAMPSCOTT	5,312,426.96	122.35	5,070,132.10	116.77	5,424,582.27	96.96	4,893,123.88	87.46
TAUNTON	3,646,245.96	23.23	4,599,776.12	29.31	16,997,791.90	87.29	14,961,096.99	76.83
WAKEFIELD	3,600,659.57	18.36	1,751,830.89	8.93	0.00	0.00	0.00	0.00
WALTHAM	11,862,565.51	47.38	10,429,434.78	41.66	23,104,857.69	69.47	24,446,631.68	73.51
WATERTOWN	3,320,819.40	25.81	3,234,805.08	25.14	15,504,321.69	121.28	14,610,432.53	114.28
WEBSTER	0.00	0.00	22,406.87	0.60	0.00	0.00	647,853.93	97.68
WELLESLEY	24,586,104.07	78.15	22,879,377.54	72.72	42,422,101.13	229.89	42,529,026.13	230.47
WEYMOUTH	5,196,419.67	17.79	3,128,457.44	10.71	0.00	0.00	0.00	0.00
WINCHESTER	8,986,909.26	103.32	10,299,981.59	118.41	10,947,163.98	96.53	10,437,900.64	92.04
WINTHROP	3,530,318.13	125.29	2,975,943.42	105.62	1,198,780.44	22.74	727,161.77	13.79
WOBURN	3,987,770.80	69.52	1,162,798.25	20.27	12,471,991.33	73.80	10,087,390.90	59.69
WORCESTER	44,422,638.02	55.63	48,539,116.35	60.79	62,513,063.39	117.35	52,577,269.54	98.70
WORCESTER COUNTY	36,044,497.65	85.51	26,453,061.68	62.76	22,519,474.19	32.95	23,259,058.83	34.03
WEST SPRINGFIELD	4,108,241.25	73.21	3,102,298.97	55.28	8,095,121.47	90.06	6,870,720.98	76.44
WESTFIELD	14,670,177.77	82.16	14,398,530.30	80.64	14,439,494.17	110.02	14,687,985.65	111.91

PART V:

INVESTMENT COUNSELORS, CONSULTANTS AND CUSTODIAN BANKS

The statute governing the investment of public pension funds enables Boards to delegate day to day management responsibilities to professional investment managers. That delegation may take place only with authorization by PERA. This Division assesses the record and qualifications of the prospective manager and the Board in an objective manner and does not substitute its judgment for that of the Board.

Each manager generally must be a registered Investment Adviser pursuant to federal law. PERA, by regulation, also requires advisers to meet a Code of Ethics for Fiduciaries and Standards of Conduct for Investment Advisers.

In order to satisfy their fiduciary obligations, Boards must employ a process in selecting firms which is similar to that which a prudent person would employ. Furthermore, following selection that duty requires Boards to formally monitor the manager's performance and take corrective action if necessary. Failure to follow this course of action could lead to a breach of fiduciary duty and personal liability for Board members.

Boards have recently retained investment consultants to assist in the selection and evaluation of money managers. Some firms also advise the Boards in establishing investment objectives and determining asset allocations. The Boards also have a fiduciary duty to use an objective, competitive process in the selection and retention of these firms. Once again, failure to fulfill that duty may subject Board members to personal liability.

Custodian banks are retained by Boards to monitor all financial transactions. Some banks also play a role in the cash management. Once again, failure to meet fiduciary duty in the selection and retention of these banks could result in personal liability for Board members.

The information that follows lists those firms which provide management, consulting and custodian services to the Boards. This information was taken from the records on file at PERA.

During the course of the last several years, the selection and evaluation of competing firms has had an increasing impact on the investment performance of the retirement systems. Prudent decision-making in this important area will not only enable Board members to avoid personal liability but will assure solid long term performance.

The following is a list of each retirement system and the investment counselor, consultant and custodian retained by each retirement system as of December 31, 1992.

ADAMS RETIREMENT SYSTEM

E.R. Taylor Investments (5/25/89)

Custodian: BayBank

AMESBURY RETIREMENT SYSTEM

Boston Financial Management, Inc. (4/17/85)

Consultant: The Hannah Group

Custodian: State Street Bank

ANDOVER RETIREMENT SYSTEM

Hawthorne Associates (8/31/89)

Custodian: State Street Bank

ARLINGTON RETIREMENT SYSTEM

Fleet Investment Advisors (3/5/85)

State Street Bank & Trust Company (2/6/92)

Consultant: Wilshire Associates

Custodian: State Street Bank

ATHOL RETIREMENT SYSTEM

Shawmut Bank, N.A. (6/25/85)

PaineWebber Properties III (12/22/88-real estate)

PaineWebber Independent Fund (8/8/89-real estate)

Custodian: Shawmut

ATTLEBORO RETIREMENT SYSTEM

BayBanks, Inc. (4/1/85)

PaineWebber Properties II (12/22/88-real estate)

PaineWebber Properties II (8/28/89-real estate)

Custodian: BayBank

BARNSTABLE COUNTY RETIREMENT SYSTEM

Aetna Capital Management (7/27/89)

Aetna Capital Management (7/27/89-real estate)

Aetna Capital Management (7/27/89-international equity)

U.S. Trust Asset Management (4/24/92)

Consultant: William M. Mercer

Custodian: Multibank (South Shore Bank)

BELMONT RETIREMENT SYSTEM

Oppenheimer Capital (6/30/89)

Putnam Global Fixed Income (11/19/92)

International Equity Management (11/19/92)

The Belmont Retirement System purchased shares of the PRIT fund on 5/24/89.

Consultant: New England Pension Consultants

Custodian: BayBank

BERKSHIRE COUNTY RETIREMENT SYSTEM

The Berkshire County Retirement System invests pursuant to statutory restrictions on investments in accordance with G.L. c. 32. The Berkshire County Retirement System purchased shares of the PRIT fund on 2/23/87.

BEVERLY RETIREMENT SYSTEM

Aetna Capital Management (8/31/89)

Aetna Capital Management (8/31/89-real estate)

Aetna Capital Management (8/31/89-international equity)

Massachusetts Financial Services (8/31/89)

PanAgora Asset Management-Asset Allocation Fund (6/24/92)

Munder Capital Management (10/8/92)

Consultant: New England Pension Consultants

Custodian: State Street Bank

BLUE HILLS REGIONAL VOCATIONAL SCHOOL EMPLOYEES RETIREMENT SYSTEM

David L. Babson (4/12/85)

Custodian: Multibank (South Shore Bank)

BOSTON RETIREMENT SYSTEM

Wellington Management Company (2/21/85)
Eagle Asset Management (11/14/86)
Avatar Associates (11/14/86)
Bear Stearns, Inc. (2/4/87)
Oechsle International Advisors (6/30/87-international equity)
Warburg Investment Management International Ltd. (7/15/87- international equity)
State Street Bank & Trust Company (12/12/88)
Back Bay Advisors (9/7/89-fixed income)
Massachusetts Financial Services (9/7/89-fixed income)
Richmond Capital Management (9/7/89-fixed income)
Metric Institutional Realty-Metric Inst. Fund L.P. (9/7/89- real estate)
Criterion Investment Management (9/14/89-fixed income)
Heitman Advisory Corporation (11/17/89-real estate)
MIG Realty Advisors (12/19/89-real estate)
Shurgard Securities Corporation-Shurgard Inst. Fund L.P. II (5/11/90-real estate)
Acadian Asset Management (5/11/90-international equity)
Dimensional Fund Advisors (5/11/90-international equity)
PCM International (5/11/90-international fixed income)
Thomas H. Lee Equity Partners, L.P. (5/11/90-leveraged buyout)
BEA Associates, Inc. (4/25/91-international equity)
RREEF MidAmerica East-IV and RREEF MidAmerica West-VI (5/5/92- real estate)
Schroder Real Estate Value-Enhancement Fund B, L.P. (5/5/92- real estate)
PCA Realty Advisors-Ruggles Center I (7/16/92-real estate)
New England Partners I, L.P.-New England Growth Fund I, L.P. (7/16/92-venture capital)

Supplementary regulations were approved for the following:

Property Capital Advisors-real estate
LaSalle Advisors (Urban Site Venture and LaSalle Fund 3)- real estate
INVESCO Realty Adv.-real estate
Frank Russell Trust-real estate
Public Storage Inst. Fund II-real estate
Copley Partners I & II-venture capital

Consultant: SEI

Custodian: State Street Bank

BRAINTREE RETIREMENT SYSTEM

1838 Investment Advisors (9/9/86)

Custodian: BayBank

BRISTOL COUNTY RETIREMENT SYSTEM

BayBanks, Inc. (3/16/88-fixed income)

Aetna Capital Management (2/23/89-real estate)

BayBanks, Inc. (7/05/89-equity)

A supplementary regulation was approved for the following:

Palmer Organization III L.P.-venture capital

Custodian: BayBank

BROCKTON RETIREMENT SYSTEM

Freedom Capital Management Corporation (6/7/89)

Loomis, Sayles & Company (6/7/89-fixed income)

Keystone Investment Management Corporation (3/1/90)

Lehndorff Babson-Fund III (5/11/90-real estate)

Bank of Ireland Asset Management (6/15/90-international equity)

Boston Capital Ventures II (11/26/91-venture capital)

Consultant: Prime (Kidder Peabody)

Custodian: Boston Safe Deposit

BROOKLINE RETIREMENT SYSTEM

State Street Research (6/26/86)

State Street Research (8/24/89-international)

The Brookline Retirement System purchased shares of the PRIT fund on 9/30/89.

Consultant: Wyatt Asset Services, Inc.

Custodian: State Street Bank

CAMBRIDGE RETIREMENT SYSTEM

APT Financial Services (5/19/88-real estate)

(APT Income Plus I L.P.)

Acorn Asset Management Corporation (11/9/90)

Freedom Capital Management Corporation (11/9/90)

State Street Research & Management Company (11/9/90)

CAMBRIDGE RETIREMENT SYSTEM (cont'd)

Wellington Management Company (11/9/90)

Mutual of NY (11/9/90-fixed income)

(Intermediate Bond Fund & Public Bond Fund Pooled Account)

Aetna Congregate Care Fund (11/9/90-real estate)

Bank of Ireland Asset Management (11/9/90-international equity)

Standard Chartered Equitor Asset Mgmt. N.A., Inc. (2/25/92- fixed income)

Consultant: Prime (Kidder Peabody)

Custodian: State Street Bank

CHELSEA RETIREMENT SYSTEM

BayBanks, Inc. (8/24/89)

Custodian: BayBank

CHICOPEE RETIREMENT SYSTEM

Freedom Capital Management Corporation (6/26/86)

Leonard Management Group (3/21/88)

State Street Research & Management Company (11/24/89)

Metric Inst. Realty Adv. (2/18/92-real estate)

(Metric Inst. Apt. Fund II, L.P.)

Met Life/State Street Research and Mgmt. Co. (11/27/91-equity)

(Capital Appreciation Acct.)

Met Life Liquidity Plus Fund (2/18/92)

Metropolitan Life Ins. Co. (11/27/91-real estate)

MassMutual Life Ins. Co. (11/27/91-fixed income)

(MassMutual Participation Investors)

Custodian: BayBank

CLINTON RETIREMENT SYSTEM

Aetna Capital Management (2/14/91)

Aetna Capital Management (2/14/91-real estate)

Aetna Capital Management (2/14/91-international equity)

CONCORD RETIREMENT SYSTEM

Fleet Investment Advisors (5/21/86)

Frank Russell Trust Company (5/21/86)

The Concord Retirement System purchased shares of the PRIT fund on 6/1/90.

Custodian: Fleet Bank

DANVERS RETIREMENT SYSTEM

Boston Financial Management, Inc. (4/3/85)

The Danvers Retirement System purchased shares of the PRIT fund on 8/18/87.

Custodian: State Street Bank

DEDHAM RETIREMENT SYSTEM

The Dedham Retirement System transferred to the PRIT fund on 6/30/88.

DUKES COUNTY RETIREMENT SYSTEM

Aetna Capital Management (3/7/91)

Aetna Capital Management (3/7/91-real estate)

BayBanks, Inc. (5/12/92)

Consultant: Wyatt Asset Services, Inc.

Custodian: BayBank

EASTHAMPTON RETIREMENT SYSTEM

Heritage Bank for Savings & Wright Investors Service (4/12/85- Northampton Institution for Savings changed its name to Heritage Bank for Savings on 6/13/90)

Custodian: Investors Bank and Trust

ESSEX COUNTY RETIREMENT SYSTEM

Freedom Capital Management Corporation (5/6/85)

State Street Research & Management Company (1/4/90)

Custodian: BayBank

EVERETT RETIREMENT SYSTEM

BayBanks, Inc. (2/15/85)

Custodian: BayBank

FAIRHAVEN RETIREMENT SYSTEM

The Fairhaven Retirement System transferred to the PRIT fund on 7/1/86.

FALL RIVER RETIREMENT SYSTEM

BayBanks, Inc. (8/27/85)

Custodian: BayBank

FALMOUTH RETIREMENT SYSTEM

State Street Bank & Trust Company (4/3/85)

Custodian: State Street Bank

FITCHBURG RETIREMENT SYSTEM

Safety Fund National Bank (4/19/85-name change from First Safety Fund National Bank)

Custodian: Safety Fund National Bank

FRAMINGHAM RETIREMENT SYSTEM

State Street Research for Met. Life (10/17/90-South Africa Free Equity Fund)

State Street Research for Met. Life (10/17/90-Bond Fund)

GFM Int'l Investors, Ltd.-Met. Life (10/9/91-international fixed income)

The Framingham Retirement System purchased shares of the PRIT fund on 11/28/86.

FRANKLIN COUNTY RETIREMENT SYSTEM

Freedom Capital Management Corporation (3/31/88)

Metropolitan Life Market Plus (4/24/92-fixed income)

Custodian: State Street Bank

GARDNER RETIREMENT SYSTEM

The Gardner Retirement System transferred to the PRIT fund on 12/1/86.

GLOUCESTER RETIREMENT SYSTEM

Freedom Capital Management Corporation (4/19/85)

The Gloucester Retirement System purchased shares of the PRIT fund on 3/1/91.

Custodian: BayBank

GREATER LAWRENCE SANITARY DISTRICT AUTHORITY RETIREMENT SYSTEM

Beacon Capital Management Inc. (5/23/90-ownership change to Beacon Capital Management Inc. from University Bank and Trust on 12/31/90)

Custodian: University Bank and Trust

GREENFIELD RETIREMENT SYSTEM

Fleet Investment Advisors (7/29/86)

PaineWebber Properties III (4/17/89-real estate)

Harbor Capital Management Company, Inc. (3/14/91)

The Greenfield Retirement System purchased shares of the PRIT fund on 2/25/87.

Consultant: **The Hannah Group**

Custodian: **State Street Bank**

HAMPDEN COUNTY RETIREMENT SYSTEM

Freedom Capital Management Corporation (10/13/88)

Wellington Management Company (5/8/91)

Consultant: **PaineWebber**

Custodian: **BayBank**

HAMPSHIRE COUNTY RETIREMENT SYSTEM

Fleet Investment Advisors (10/26/89)

Bank of Ireland Asset Management (12/12/90-international equity)

Leshner Financial Services, Inc. (12/12/90-equity)

Lehndorff & Babson Property Fund IV (1/29/91)

Shurgard Institutional Fund L.P. II (1/29/92-real estate)

RhumbLine Advisers (2/25/92-equity)

Wellington Management Company (11/12/92)

Consultant: **The Hannah Group**

Custodian: **State Street Bank**

HAVERHILL RETIREMENT SYSTEM

The Boston Company (7/8/85)

Lehndorff & Babson Property Fund III (10/27/88-real estate)

Babson-Stewart Ivory (8/17/89-international equity)

E.R. Taylor Investments, Inc. (1/15/91-equity)

Phoenix Investment Counsel, Inc. (1/15/91-equity)

New England Partners I, L.P. (1/21/92-venture capital)

(New England Growth Fund I, L.P.)

Babson-Stewart Ivory Int'l (1/21/92-international equity)

(Babson-Stewart Ivory Int'l LP)

HAVERHILL RETIREMENT SYSTEM (cont'd)

BioVentures Ltd. Partn. (1/21/92-venture capital)

(Commonwealth BioVentures IV L.P.)

Shurgard Partners L.P. II (1/21/92-real estate)

(Shurgard Inst. Fund L.P. II)

Lehndorff & Babson Real Estate Counsel (1/21/92-real estate)

(Lehndorff & Babson Property Fund IV)

Consultant: The Hannah Group

Custodian: State Street Bank

HINGHAM RETIREMENT SYSTEM

The Hingham Retirement System transferred to the PRIT fund on 7/1/90.

HOLYOKE RETIREMENT SYSTEM

Freedom Capital Management Corporation (12/6/85)

Clemente Capital, Inc. (3/1/90-Freedom Global Fund and Freedom Environmental Fund)

Custodian: BayBank

HULL RETIREMENT SYSTEM

Standard Chartered Equitor Asset Management (10/16/90)

Custodian: State Street Bank

LAWRENCE RETIREMENT SYSTEM

National Investment Services of America, Inc. (1/24/86)

Custodian: BayBank

LEOMINSTER RETIREMENT SYSTEM

Safety Fund National Bank (4/1/85-name change from First Safety Fund National Bank)

Custodian: Safety Fund National Bank

LEXINGTON RETIREMENT SYSTEM

Wellington Management Company (1/25/89)

Wellington Management Company (5/22/92-international equity)

Custodian: BayBank

LOWELL RETIREMENT SYSTEM

Shurgard Realty Advisors-Shurgard Inst. Fund L.P. (4/6/89- real estate)

Fleet Investment Advisors (9/14/89-equity)

J.L. Kaplan Associates (9/14/89-equity)

Consistent Asset Management (9/14/89-fixed income)

One Federal Asset Management (9/14/89-fixed income)

Metric Institutional Realty-Metric Apt. Fund (2/8/90-real estate)

Charles River Partnership VI-A (5/2/91-venture capital)

United States Trust Asset Management (5/22/91-equity)

Heitman Advisory Corporation (1/14/92-real estate)

(Heitman Real Estate Fund V)

Lehndorff & Babson (1/14/92-real estate)

(Lehndorff & Babson Property Fund IV)

New England Partners I, L.P. (2/19/92-venture capital)

(New England Growth Fund I, L.P.)

PCA Realty Advisors (3/4/92-real estate)

(Ruggles Center I)

The Lowell Retirement System purchased shares of the PRIT fund on 7/10/87.

Consultant: The Hannah Group

Custodian: BayBank

LYNN RETIREMENT SYSTEM

de Burlo Group (3/26/85)

A supplementary regulation was approved for the following:

Palmer Organization III L.P.-venture capital

Custodian: BayBank

MALDEN RETIREMENT SYSTEM

de Burlo Group (3/27/85)

Custodian: State Street Bank

MARBLEHEAD RETIREMENT SYSTEM

de Burlo Group (4/3/85)

Custodian: BayBank

MARLBOROUGH RETIREMENT SYSTEM

Freedom Capital Management Corporation (6/23/88)

Consultant: The Hannah Group

Custodian: BayBank

MASSACHUSETTS HOUSING FINANCE AGENCY RETIREMENT SYSTEM

The Massachusetts Housing Finance Agency Retirement System
transferred to the PRIT fund on 6/1/87.

MASSACHUSETTS PORT AUTHORITY RETIREMENT SYSTEM

Wellington Management Company (2/7/85)

Wellington Management Company (11/24/89-international)

A supplementary regulation was approved for the following:

Copley Partners I & II-venture capital

Custodian: Shawmut

MASSACHUSETTS TURNPIKE AUTHORITY RETIREMENT SYSTEM

S.J. Britton Investment Counsel (8/6/91)

Consultant: New England Pension Consultants

Custodian: Shawmut

MASSACHUSETTS WATER RESOURCES AUTHORITY RETIREMENT SYSTEM

The Boston Company (2/11/88)

The Massachusetts Water Resources Authority Retirement System purchased
shares of the PRIT fund on 2/1/88.

Consultant: The Hannah Group

Custodian: Fleet Bank

MAYNARD RETIREMENT SYSTEM

BayBanks, Inc. (2/4/91)

Custodian: BayBank

MEDFORD RETIREMENT SYSTEM

Fleet Investment Advisors (3/14/85)
Lehndorff & Babson IV (3/12/90-real estate)
Shurgard Realty Advisors II (3/12/90-real estate)
Connecticut Investment Management, Inc. (8/14/91-equity)
PCA Realty Advisors (3/4/92-real estate) (Ruggles Center I)
Babson-Stewart Ivory, L.P. (7/28/92-international equity)

Consultant: The Hannah Group
Custodian: State Street Bank

MELROSE RETIREMENT SYSTEM

Fleet Investment Advisors (4/3/85)
Lehndorff & Babson IV (7/27/89-real estate)
Capital Research & Management Company (3/25/92-EuroPacific Growth Fund)

Custodian: Fleet Bank

METHUEN RETIREMENT SYSTEM

David L. Babson (10/16/86)
The Methuen Retirement System purchased shares of the PRIT fund on 4/1/88.

Custodian: Fleet Bank

MIDDLESEX COUNTY RETIREMENT SYSTEM

Fleet Investment Advisors (3/26/85)
Oppenheimer Capital (8/25/87)
Income Research & Management (9/28/89-fixed income)
Gardner & Preston Moss, Inc. (9/28/89-fixed income)
Lehndorff & Babson IV (2/1/90-real estate)
Metric Institutional Realty-Metric Inst. Apt. Fund (2/1/90-real estate)
Metropolitan Life (2/1/90-real estate)
Shurgard Realty Advisors-Shurgard Inst. Fund L.P. II (2/1/90-real estate)
MFS Small Cap Growth (5/11/90)
Bank of Ireland Asset Management (1/10/91-international equity)
Equitable Capital Management Corporation (1/10/91-equity)
Hawthorne Associates, Inc. (1/10/91-equity)
Commonwealth BioVentures III L.P. (3/27/91-venture capital)
Charles River Partnership VI-A (4/10/91-venture capital)
BayBanks, Inc. (5/30/91-fixed income)
New England Partners I, L.P. (2/18/92-venture capital)
(New England Growth Fund I, L.P.)

MIDDLESEX COUNTY RETIREMENT SYSTEM (cont'd)

Metric Inst. Realty Adv. (2/18/92-real estate)

(Metric Inst. Apt. Fund II, L.P.)

Rice Capital Group III, L.P. (2/18/92-venture capital)

(Rice Mezzanine Lenders L.P.)

PCA Realty Advisors (3/4/92-real estate)

(Ruggles Center I)

Equitable Life Assurance Society of the U.S. Equitable Real Estate Investment Management, Inc. (12/10/92-real estate)

(Equitable Real Estate Value Enhancement Fund)

Loomis, Sayles and Company (12/10/92-fixed income)

Van Kampen Merritt Management, Inc. (12/10/92-global bonds)

A supplementary regulation was approved for the following:

APT Financial Services (APT Income Plus I L.P.)-real estate

Consultant: **The Hannah Group**

Custodian: **BayBank**

MILFORD RETIREMENT SYSTEM

BayBank, Inc. (1/18/89)

Custodian: **BayBank**

MILTON RETIREMENT SYSTEM

The Milton Retirement System transferred to the PRIT fund on 7/1/86.

MINUTEMAN REGIONAL VOCATIONAL TECHNICAL SCHOOL DISTRICT RETIREMENT SYSTEM

The Minuteman Regional Vocational Technical School District Retirement System transferred to the PRIT fund on 7/1/85.

MONTAGUE RETIREMENT SYSTEM

The Montague Retirement System transferred to the PRIT fund on 7/1/86.

NATICK RETIREMENT SYSTEM

United Investment Counsel (3/14/85)

Met. Life/State Street Research Bond Fund (11/27/91)

Met. Life/State Street Research S. Africa Free (1/29/92-equity)

Custodian: **BayBank**

NEEDHAM RETIREMENT SYSTEM

The Needham Retirement System transferred to the PRIT fund on 7/1/85.

NEW BEDFORD RETIREMENT SYSTEM

Massachusetts Financial Services (6/15/89)

Aetna Capital Management (6/15/89)

Aetna Capital Management (6/15/89-real estate)

Aetna Capital Management (6/15/89-international equity)

BayBanks, Inc. (10/1/92)

The New Bedford Retirement System purchased shares of the PRIT fund on 4/1/92.

Consultant: Wyatt Asset Services, Inc.

Custodian: BayBank

NEWBURYPORT RETIREMENT SYSTEM

Boston Financial Management, Inc. (3/28/85)

Custodian: State Street Bank

NEWTON RETIREMENT SYSTEM

1838 Investment Advisors (3/19/87)

Freedom Capital Management Corporation (3/19/87)

Bankers Trust Investment Management Ltd. (5/23/90- international equity)

Phoenix Investment Counsel (1/21/92-equity)

David L. Babson (1/21/92-equity)

Custodian: Boston Safe Deposit

NORFOLK COUNTY RETIREMENT SYSTEM

The Norfolk County Retirement System transferred to the PRIT fund on 11/1/85.

NORTH ADAMS RETIREMENT SYSTEM

de Burlo Group (3/25/85)

Custodian: Fleet Bank

NORTH ATTLEBORO RETIREMENT SYSTEM

PaineWebber Properties III (10/27/88-real estate)

PaineWebber Properties II (6/22/89-real estate)

PaineWebber Independent Fund (7/13/89-real estate)

NORTH ATTLEBORO RETIREMENT SYSTEM (cont'd)

Connecticut National Bank (12/26/90-equity)

Oxford Capital Management, Inc. (4/9/91)

Babson-Stewart Ivory (12/26/91-international equity)

(Babson-Stewart Ivory L.P.)

RhumbLine Advisers (10/1/92)

Consultant: The Hannah Group

Custodian: BayBank

NORTHAMPTON RETIREMENT SYSTEM

de Burlo Group (4/18/85)

Custodian: BayBank

NORTHBRIDGE RETIREMENT SYSTEM

The Northbridge Retirement System transferred to the PRIT fund on 1/1/88.

NORWOOD RETIREMENT SYSTEM

Fleet Investment Advisors (3/5/85)

Dean Witter Dividend Growth Securities, Inc. (11/2/89)

Manufacturers Life Insurance Equity Fund (11/2/89)

Dean Witter Realty Yield Plus L.P. (11/2/89-real estate)

MFS Lifetime Capital Growth Trust (11/17/89)

Capital Research & Management (1/7/92-EuroPacific Growth Fund)

The Norwood Retirement System purchased shares of the PRIT fund on 8/13/87.

Custodian: BayBank

PEABODY RETIREMENT SYSTEM

Freedom Capital Management Corporation (7/8/85)

Clemente Capital, Inc. (3/22/90-Freedom Global Fund and Freedom Environmental Fund)

Custodian: BayBank

PITTSFIELD RETIREMENT SYSTEM

Freedom Capital Management Corporation (6/15/89)

Custodian: First Agricultural Bank

PLYMOUTH RETIREMENT SYSTEM

State Street Bank & Trust Company (2/24/89)

Custodian: State Street Bank

PLYMOUTH COUNTY RETIREMENT SYSTEM

Internal-John McLellan (5/14/85-partial removal of statutory restrictions)

Babson-Stewart Ivory (5/4/89-international equity)

Lehndorff & Babson III (5/4/89-real estate)

Shurgard Realty Advisors (Shurgard Institutional Fund L.P.) (5/4/89-real estate)

Metric Institutional Realty (Metric Institutional Apartment Fund, L.P.) (10/5/89-real estate)

Charles River Partnership VI-A (3/26/91-venture capital)

American Network Group Institutional Fund I, L.P. (4/11/91-venture capital)

JCW Ventures (Capital Fund Partners IV) (5/30/91-venture capital)

Shurgard Income Properties III (1/14/92-real estate)

Shurgard Income Properties IV (1/14/92-real estate)

New England Partners I, L.P. (7/1/92-venture capital)

(New England Growth Fund I, L.P.)

Consultant: The Hannah Group

Custodian: State Street Bank

QUINCY RETIREMENT SYSTEM

Mass Financial Services (2/9/89)

M.D. Sass Investors Company (2/9/89)

RhumbLine Advisers (3/13/92)

The Quincy Retirement System purchased shares of the PRIT fund on 3/1/90.

Custodian: State Street Bank

READING RETIREMENT SYSTEM

The Reading Retirement System transferred to the PRIT fund on 6/1/88.

REVERE RETIREMENT SYSTEM

Standard Chartered Equitor Asset Management (8/8/90)

Nutter Investment Advisors (12/31/91-equity)

Consultant: Faneuil Hall Securities, Inc.

Custodian: State Street Bank

SALEM RETIREMENT SYSTEM

Freedom Capital Management Corporation (11/17/88)
PaineWebber Properties III (11/17/88-real estate)
1838 Investment Advisors (4/12/90)

Custodian: BayBank

SAUGUS RETIREMENT SYSTEM

The Saugus Retirement System transferred to the PRIT fund on 7/1/86.

SHREWSBURY RETIREMENT SYSTEM

The Shrewsbury Retirement System transferred to the PRIT fund on 7/1/85.

SOMERVILLE RETIREMENT SYSTEM

BayBanks, Inc. (2/19/92)
Standish, Ayer & Wood, Inc. (4/15/92)

Custodian: BayBank

SOUTHBRIDGE RETIREMENT SYSTEM

Freedom Capital Management Corporation (11/9/89)

Custodian: State Street Bank

SPRINGFIELD RETIREMENT SYSTEM

BayBanks, Inc. (10/13/87)
Freedom Capital Management Corporation (1/2/92)
Massachusetts Mutual Life Insurance Company (1/2/92)
Wellington Management Company (1/2/92)

Consultant: Wyatt Asset Services, Inc.

Custodian: BayBank

STATE EMPLOYEES' RETIREMENT SYSTEM

The State Employees' Retirement System invests in the MASTERS Trust managed by the Office of the Treasurer. See list of investment counselors for the MASTERS Trust.

STONEHAM RETIREMENT SYSTEM

Lehndorff & Babson Real Estate Counsel (Property Fund III) (11/17/88-real estate)

Lehndorff & Babson Real Estate Counsel (Property Fund IV) (1/15/91-real estate)

Independence Investment Associates (12/10/91)

Consultant: The Hannah Group

Custodian: BayBank

SWAMPSCOTT RETIREMENT SYSTEM

de Burlo Group (3/27/85)

Custodian: Fleet Bank

TAUNTON RETIREMENT SYSTEM

U.S. Trust Company (6/25/85)

Lehndorff & Babson Real Estate IV (12/21/89-real estate)

Capital Research & Management (5/16/90-EuroPacific Growth Fund)

Custodian: U.S. Trust

TEACHERS' RETIREMENT SYSTEM

The Teachers' Retirement System invests in the MASTERS Trust managed by the Office of the Treasurer. See list of investment counselors for the MASTERS Trust.

WAKEFIELD RETIREMENT SYSTEM

The Wakefield Retirement System transferred to the PRIT fund on 7/1/85.

WALTHAM RETIREMENT SYSTEM

BayBanks, Inc. (2/11/85)

Custodian: BayBank

WATERTOWN RETIREMENT SYSTEM

The Boston Company (3/19/85)

Gardner & Preston Moss, Inc. (10/5/89)

Lehndorff & Babson III (10/5/89-real estate)

Wellington Management Company (3/20/91-small cap. equities)

Consultant: Dahab Associates, Inc.

Custodian: BayBank

WEBSTER RETIREMENT SYSTEM

Aetna Capital Management (6/26/91-domestic)

Aetna Capital Management (6/26/91-real estate)

Aetna Capital Management (6/26/91-international equity)

WELLESLEY RETIREMENT SYSTEM

Standish, Ayer & Wood (2/27/85)

State Street Research & Management Company (1/23/90)

Consolidated Investment Corporation (Consolidated Standish Short-Term Asset Reserve Fund) (1/2/91)

Standish International Fixed Income Fund (5/8/91)

State Street Bank & Trust (South Africa Free EAFE Fund) (1/21/92- international equity)

A supplementary regulation was approved for the following:

Standish Small Equity Fund

Custodian: Shawmut

Consultant: William M. Mercer

WEST SPRINGFIELD RETIREMENT SYSTEM

Shawmut Bank, N.A. (2/21/86)

Custodian: Shawmut

WESTFIELD RETIREMENT SYSTEM

PaineWebber Properties III (11/17/88-real estate)

PaineWebber Properties II, III (9/14/89-real estate)

Freedom Capital Management Corporation (10/16/90)

State Street Research & Management Company (10/16/90)

Custodian: Fleet Bank

WEYMOUTH RETIREMENT SYSTEM

The Weymouth Retirement System transferred to the PRIT fund on 10/1/84.

WINCHESTER RETIREMENT SYSTEM

Freedom Capital Management Corporation (4/26/90)

Consultant: Shearson Lehman

Custodian: BayBank

WINTHROP RETIREMENT SYSTEM

Fleet Investment Advisors (3/12/85)

Custodian: Fleet Bank

WOBURN RETIREMENT SYSTEM

David L. Babson (3/21/88)

Custodian: BayBank

WORCESTER RETIREMENT SYSTEM

Fleet Investment Advisors (1/14/87)

Safety Fund National Bank (3/6/91)

State Street Research & Management (3/6/91)

Metropolitan Life Insurance Tower Fund (3/6/91-real estate)

Metropolitan Life Insurance (3/6/91-real estate-Closed-End II Fund)

BEA Associates (8/15/91-international equity)

Bank of Ireland Asset Management Ltd. (8/15/91-international equity)

Wellington Management Company (8/15/91-international equity)

Investment Advisors, Inc. (3/11/92-small cap.)

New England Partners I, L.P. (3/11/92-venture capital)

(New England Growth Fund I, L.P.)

One Federal Asset Management (3/11/92-small cap.)

Rice Capital Group III, L.P. (3/11/92-venture capital)

(Rice Mezzanine Lenders L.P.)

David L. Babson (7/30/92-fixed income)

The Worcester Retirement System purchased shares of the PRIT fund on 12/30/86.

Consultant: The Hannah Group

Custodian: State Street Bank

WORCESTER COUNTY RETIREMENT SYSTEM

Massachusetts Financial Services (8/21/91-equity)

One Federal Asset Management (8/21/91-fixed income)

Wellington Management Company (8/21/91-fixed income)

Consultant: SEI

Custodian: Boston Safe Deposit

The PENSION RESERVE INVESTMENT TRUST (PRIT) Fund has retained the following investment counselors as of December 31, 1992:

Domestic and International Equity:

Alliance Capital Management Corporation
Babson Stewart-Ivory
Bankers Trust Company
Baring International Investment, Ltd.
Batterymarch Financial
Bear Stearns & Company
Capital Guardian
Emerging Markets Management
Fidelity Investments
H.D. International Ltd.
Massachusetts Financial Services
PanAgora Asset Management
Putnam Advisory Company
RhumbLine Advisors
Scudder, Stevens & Clark
State Street Bank & Trust Company
TCW Asset Management

Domestic and International Fixed Income:

Bankers Trust
Baring International Asset Management, Ltd.
Equitable Capital Management Corp.
Fidelity Management
W.R. Huff Asset Management
Massachusetts Financial Services
The Putnam Advisory Company
N.M. Rothschild International Asset Management

Domestic Real Estate:

Boston Financial Group
Copley Real Estate Advisors, Inc.
Heitman Advisory Corp.
Invesco Realty Advisors
JMB Institutional Realty

Domestic Real Estate (cont'd):

John Hancock Mutual Life Insurance Company
Massachusetts Mutual Life Insurance Company
TCW Realty Advisors

Domestic and International Venture Capital and Special Equity Partnerships:

Advent International Corporation
Advent Management Opportunity
Alan Patricof Associates Ltd.
Boston Ventures
Commonwealth BioVentures
Davis Venture
Davis Venture Partners
Forstmann Little & Company
Golder, Thoma and Cressey
John Hancock Venture Capital Management
Joseph Littlejohn & Levy
Invexco, Inc.
Kohlberg, Kravis & Roberts & Company
MMG Patricof
Morgan Holland Partners
Schroder UK Buyout Fund
Southern California Ventures
Smith Offshore Exploration Company
TA Associates
Thomas H. Lee Acquisitions
Venture Capital Fund of New England
Vista Partners

Consultant: Wilshire Associates

Custodian: State Street Bank

The MASTERS Trust has retained the following external investment counselors as of December 31, 1992:

Domestic Fixed Income:

Loomis, Sayles & Company

International Fixed Income:

Massachusetts Financial Services
The Putnam Companies
Scudder, Stevens & Clark International

Domestic Equity:

Chancellor Capital Management, Inc.
Equitable Capital Management
Fidelity Management Trust Company
Goldman Sachs & Company
Greaves Capital Management
Independence Investment Associates
Massachusetts Financial Services
Morgan Stanley Asset Management
Numeric Investors, L.P.
The Boston Company

International Equity:

B.E.A. Associates
Fidelity Management Trust Company
PanAgora Asset Management
Wardley Investment Services Ltd.

Domestic Balanced:

The RXR Group

Future Funds:

Prudential-Bache Securities

Alternative Type Investments:

Massachusetts Fiduciary Advisors
Sentry Financial Corporation

Real Estate:

Aetna Life Insurance
Aldrich, Eastman & Waltch
Bear Stearns Asset Management
Copley Real Estate Advisors
First Chicago - Brinson Partners
Franklin Properties, Inc.
Hancock Realty Investors
Lehndorff & Babson Real Estate Counsel
Meridian Point Company
Metric Institutional Realty Advisors
Public Storage Institutional Realty
Shurgard Institutional
The Sierra Capital Realty Trust
The Sterling Group, Inc.
TA Associates Realty Trust

Venture Capital:

Beta Partners Limited Partnership
Bigler Crossroads Investment Management Company
Clayton & Dublier
Frontenac Company
Hancock Venture Partners
Prudential Equity Investors
Narragansett Capital, Inc.
New Enterprise Associates
TA Communications Partners
The Vista Group
Thomas H. Lee Equity Partners
Welsch, Carson, Anderson & Stowe

Consultant: Callan & Associates

Custodian: State Street Bank & Trust Company

PENSION INVESTMENT ADVISORY UNIT

ROBERT P. SHAW
Director

INVESTMENT ANALYSTS

VICTORIA MARCORELLE
MARY J. McNAMARA

ROSE CIPRIANI
Administrative Assistant

**DIVISION OF PUBLIC EMPLOYEE
RETIREMENT ADMINISTRATION**

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